



APPROACHES TO ENHANCE FIXED ASSETS MANAGEMENT OF THE
UNIVERSITIES IN JIANGXI PROVINCE

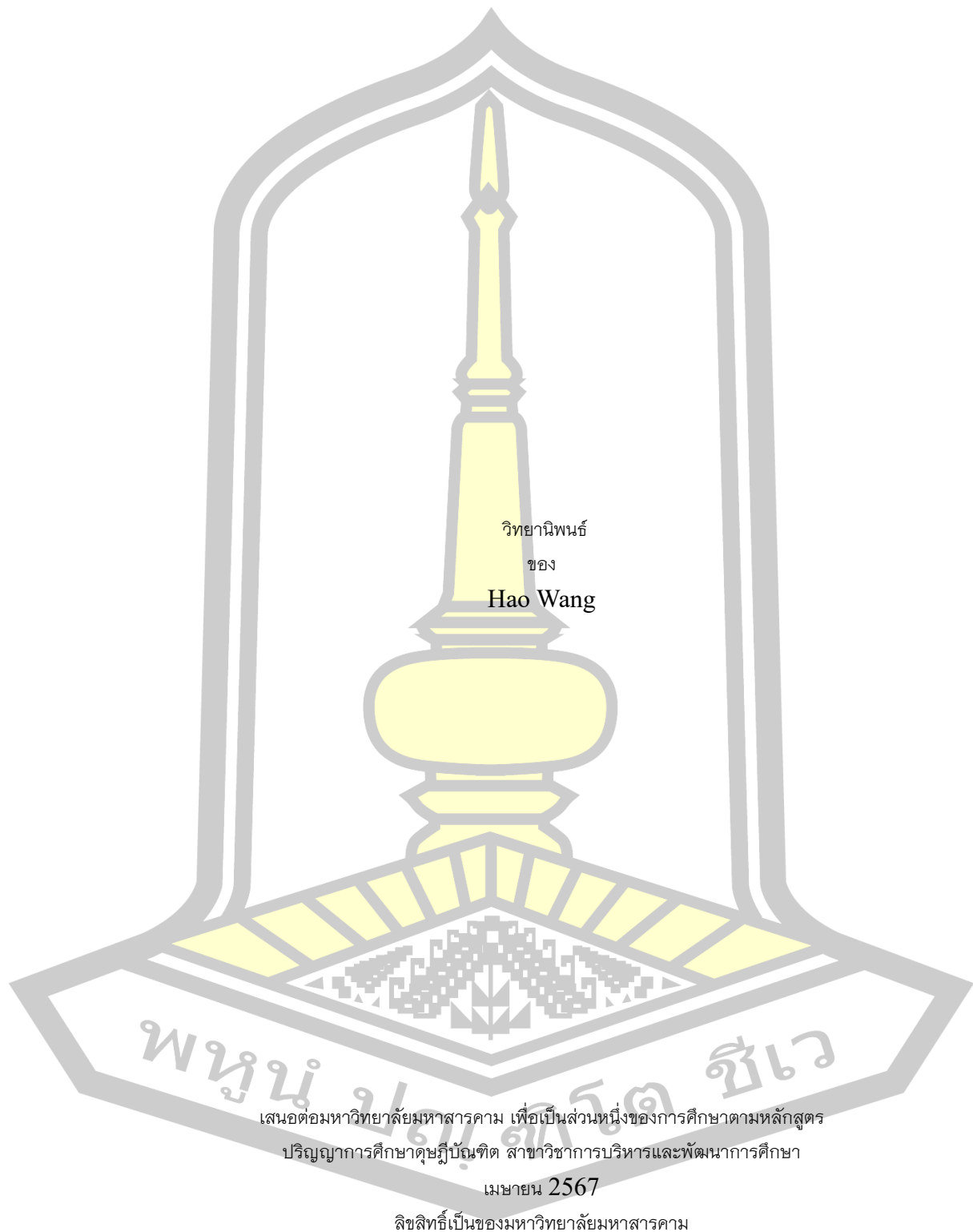
Hao Wang

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Doctor of Education in Educational Administration and Development

April 2024

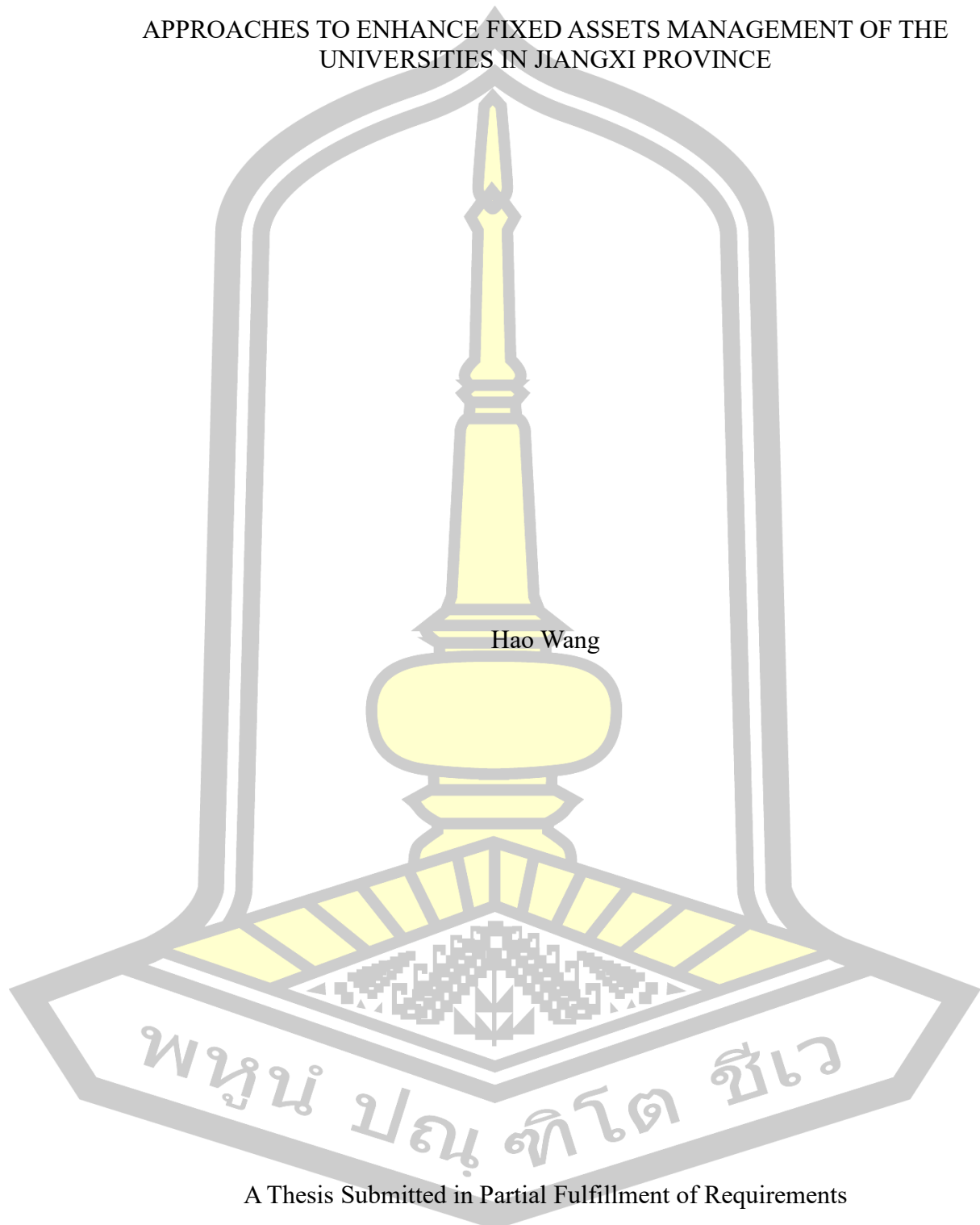
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ABSTRACT

This research aims to : 1) To investigate components and indicators of fixed assets management of the universities in Jiangxi Province. 2) To explore the current state, desired state and priority demand of the fixed assets management of the universities in Jiangxi Province. 3) To develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province. This research is divided into 3 phases. Phase 1: Investigate components and indicators of fixed assets management of the universities in Jiangxi Province. Researcher invited 5 experts to evaluate the components and indicators of fixed assets management. Phase 2: Explore the current state, desired state of the fixed assets management of the universities in Jiangxi Province. Researcher conducted the questionnaire survey on 142 fixed assets management staff from 3 universities. Researcher selected 5 experts from 3 universities in Jiangxi Province for interviews. These 5 experts are researchers and managers in the field of educational administration, each with over 5 years of experience in educational management and holding a master's degree or higher. Phase 3: Develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province. This phase focused on developing and evaluating approaches that can significantly enhance the efficiency of fixed assets management of universities in Jiangxi Province. The evaluation was conducted through in-depth

interviews with 5 experts, including academics, educators, and principals, who have extensive experience and knowledge in the field of fixed assets management.

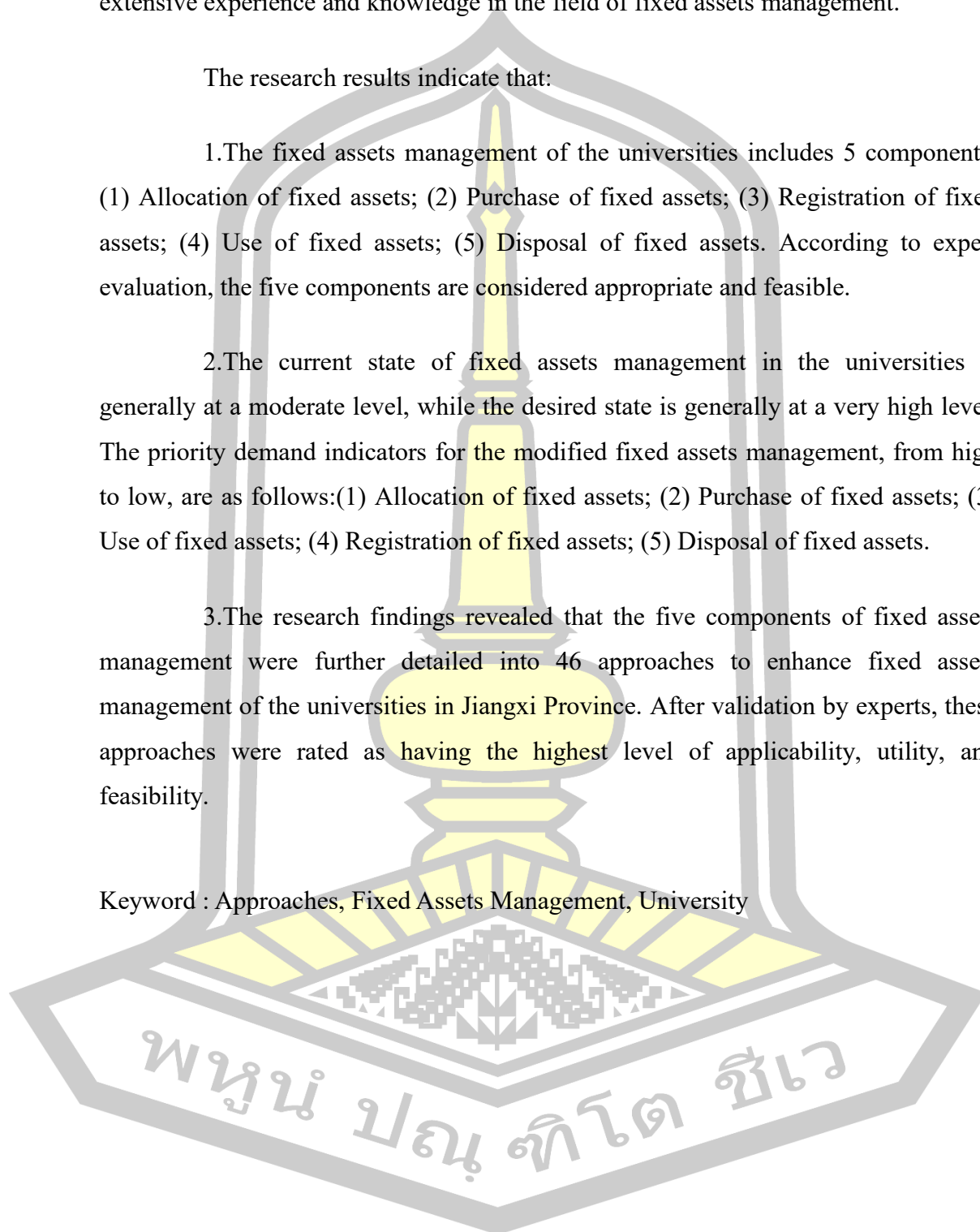
The research results indicate that:

1.The fixed assets management of the universities includes 5 components: (1) Allocation of fixed assets; (2) Purchase of fixed assets; (3) Registration of fixed assets; (4) Use of fixed assets; (5) Disposal of fixed assets. According to expert evaluation, the five components are considered appropriate and feasible.

2.The current state of fixed assets management in the universities is generally at a moderate level, while the desired state is generally at a very high level. The priority demand indicators for the modified fixed assets management, from high to low, are as follows:(1) Allocation of fixed assets; (2) Purchase of fixed assets; (3) Use of fixed assets; (4) Registration of fixed assets; (5) Disposal of fixed assets.

3.The research findings revealed that the five components of fixed assets management were further detailed into 46 approaches to enhance fixed assets management of the universities in Jiangxi Province. After validation by experts, these approaches were rated as having the highest level of applicability, utility, and feasibility.

Keyword : Approaches, Fixed Assets Management, University



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I extend my heartfelt appreciation to all the professors and lecturers who have guided me throughout my doctoral journey. Their vast knowledge and academic rigor have significantly expanded my understanding and perspectives, leaving an indelible mark on my academic growth. My gratitude also goes out to the entire faculty of education for their invaluable support, both seen and unseen, which has been instrumental in my progress and achievements. Their encouragement and assistance have been pivotal to my success, and for that, I am eternally thankful.

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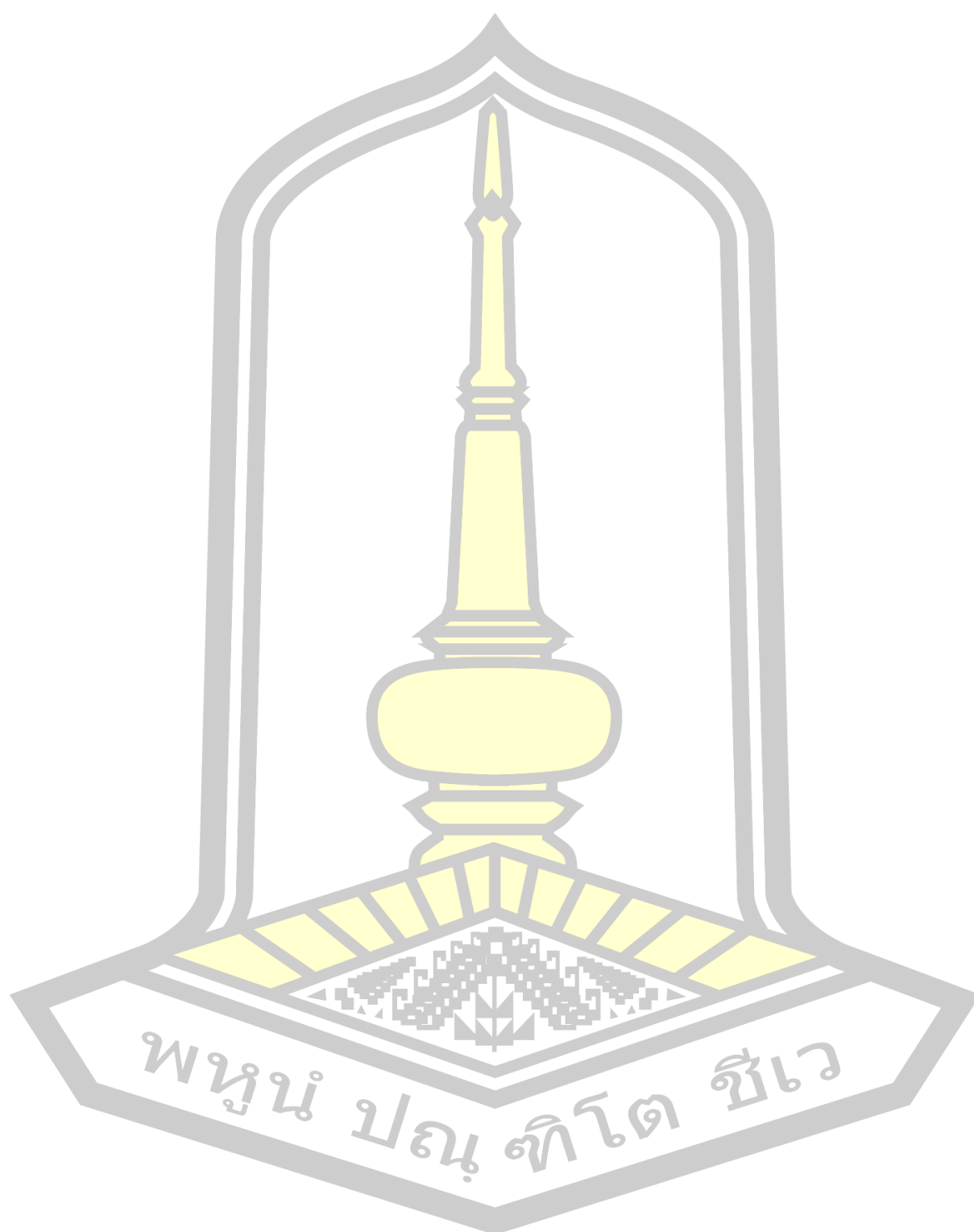


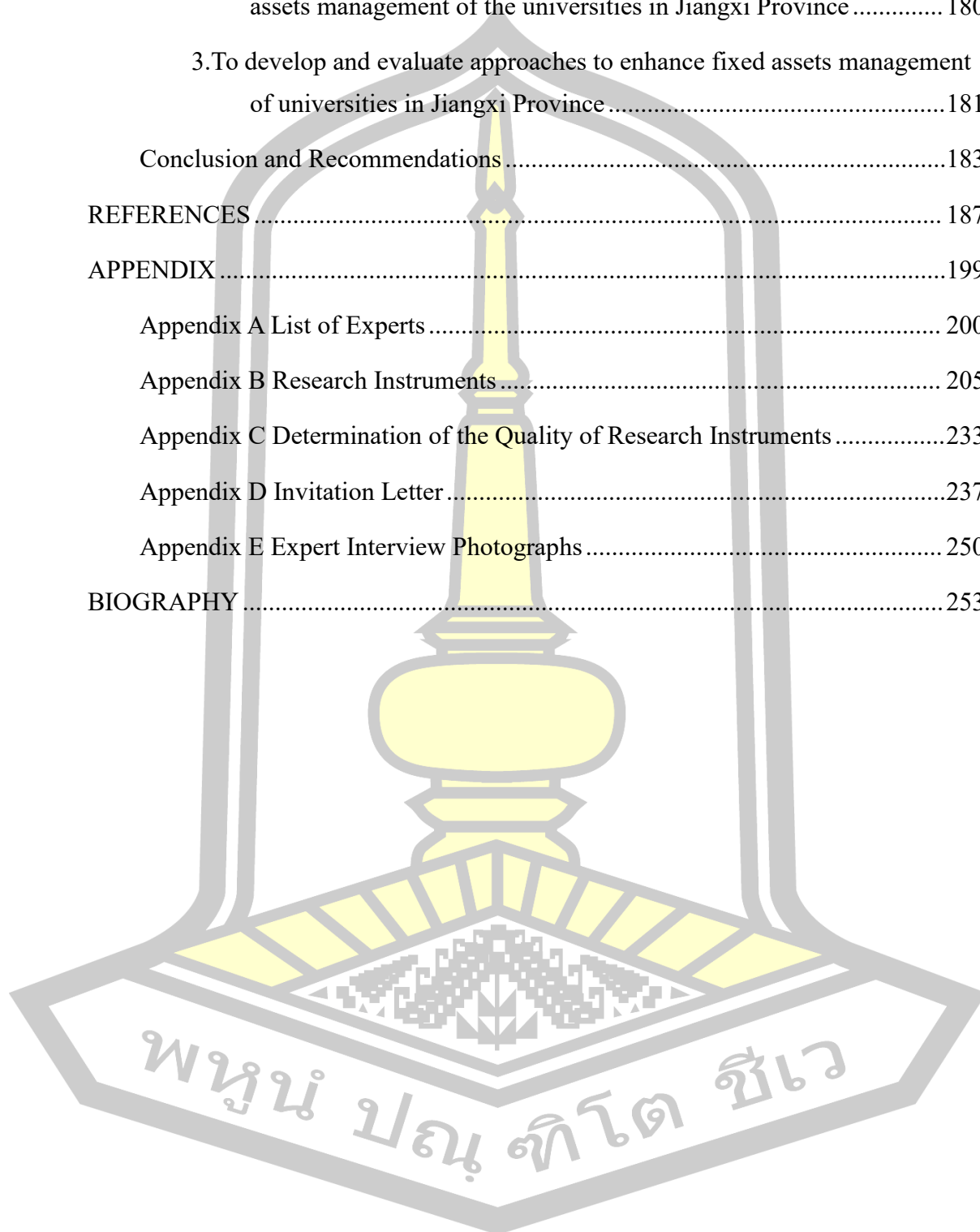
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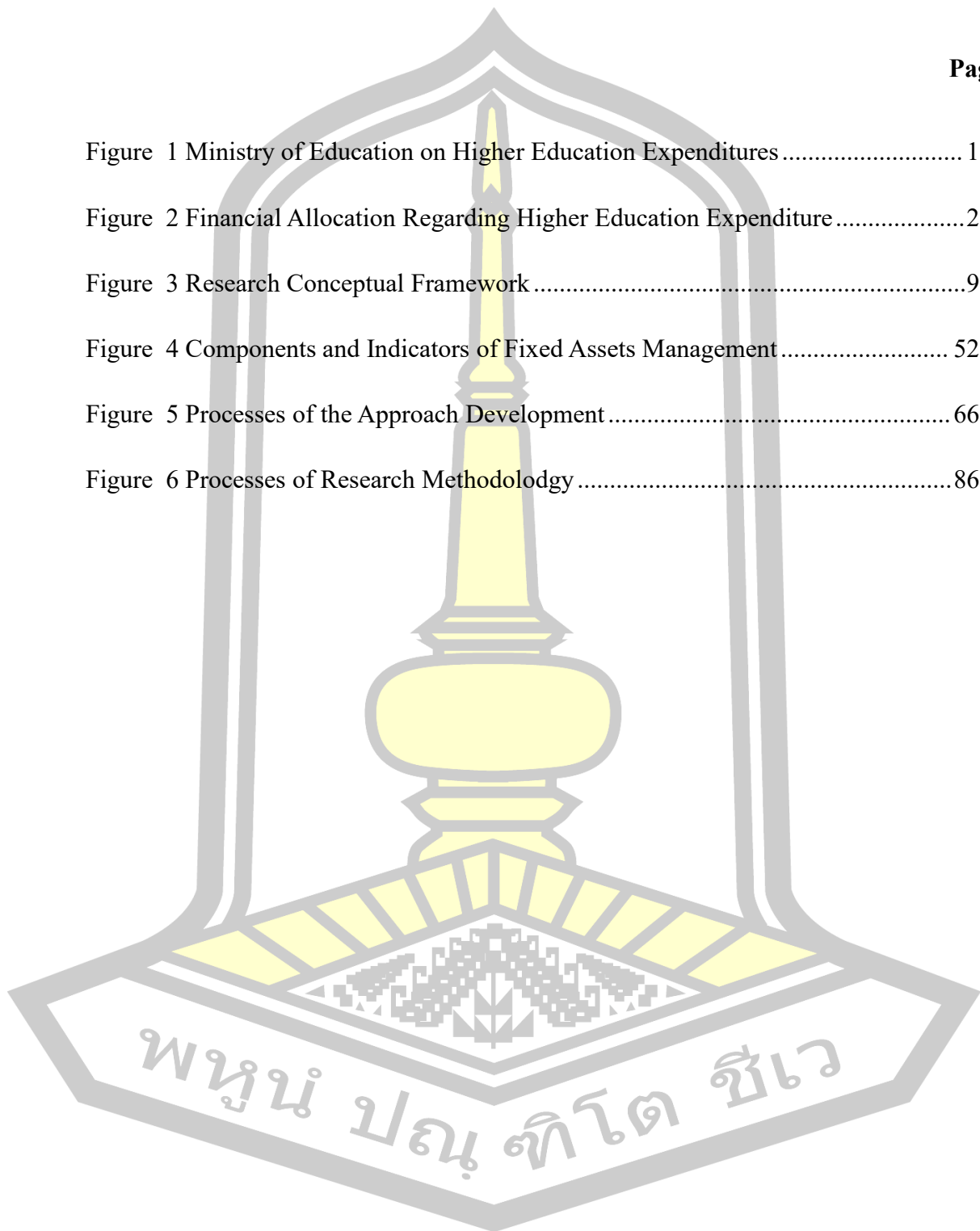
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CHAPTER I

INTRODUCTION

Background

Chinese Universities are equipped with the function of cultivating and training talents, and their own development has become the key to sustain the competitiveness of a country and nation. In recent years, with the deepening of China's education reform and the comprehensive implementation of the strategy of revitalizing the country through science and education and the strategy of strengthening the country through talents, the development of higher education has shown even more great potential and has entered a period of rapid development. Therefore, the state has increased investment in the field of higher education, and China's higher education has entered into a high-speed development track, while colleges and universities have accumulated a large amount of fixed assets (Chinese Ministry of Education,2011). With the continuous increase of education funding, the scale of higher education institutions has expanded, leading to a rapid increase in the number of state-owned assets, reaching billions of yuan. (Cao, Y.H.,2018).

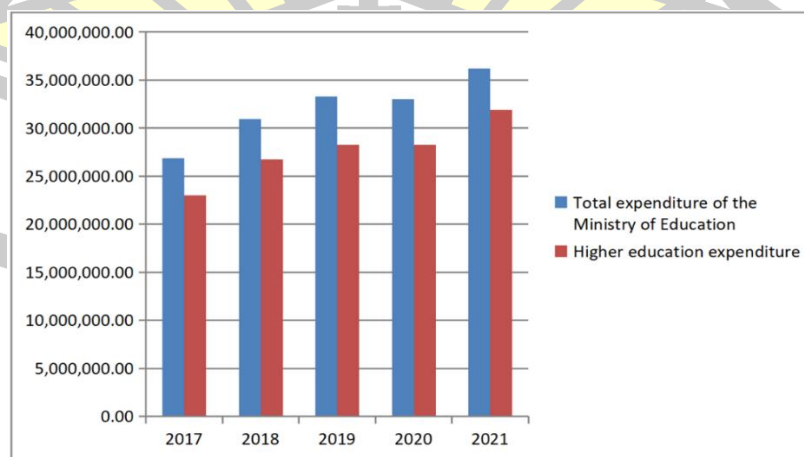


Figure 1 Ministry of Education on Higher Education Expenditures

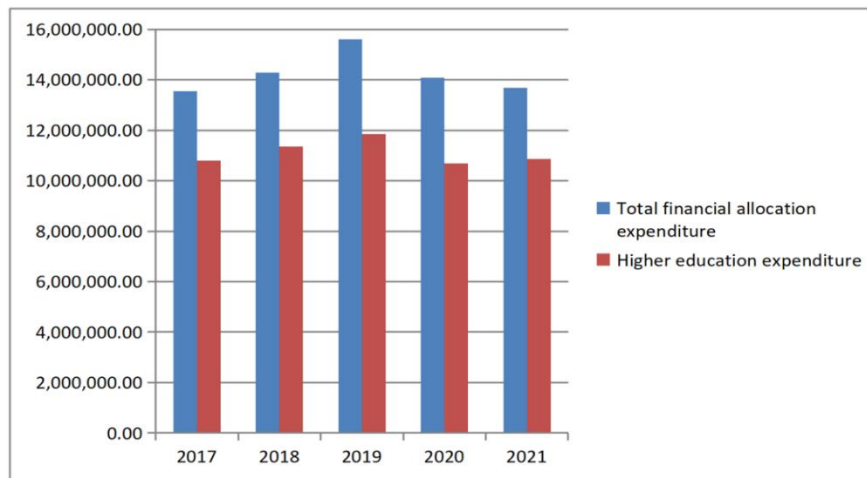


Figure 2 Financial Allocation Regarding Higher Education Expenditure

Fixed assets of the universities include assets formed by state financial funds, assets transferred to colleges and universities by the state without compensation, fixed assets formed by using the income of fixed assets organization according to the state policy, and other assets recognized as fixed assets in accordance with the law, such as accepting donations, which are expressed in the form of current assets, fixed assets, construction in progress, intangible assets and outward investment (Ministry of Education of China, 2017). Fixed assets of the universities are the hardware guarantee and basic conditions for the development of university running undertaking, and fixed assets of universities are not only the external standard to measure the scale of the university running, but also the material basis to determine the level of higher education (Chinese State Council, 2018).

Universities assume specific management responsibilities for the possession and use of fixed assets. The presidents of universities are the first responsible people for the management of fixed assets, and the leaders in charge of the universities are the main responsible people for the management of fixed assets. Universities should establish and improve the specific system of asset allocation, use, disposal, performance evaluation, information construction, statistical report and daily

supervision. The internal fixed assets management organizations should be scientifically and reasonably set up to implement unified leadership and centralized management of fixed assets in universities (Ministry of Education of China,2017). Since the fixed assets management of universities has been in a relatively lagging condition for a long time in Jiangxi Province, there are many problems such as backward management system, weak management awareness and vague management authority, which hinders the long-term development of universities. Therefore, the universities should adjust fixed assets management mode and set up a separate fixed assets management department to unify fixed assets management (Feng, Y,2018).

In recent years, the government and education authorities have increased the supervision of fixed assets in universities. From the inspection and inventory of fixed assets in universities, as well as the situation reflected by various audits, the security, integrity, and preservation of fixed assets in universities are facing challenges. Since most of universities focus on teaching and scientific research, they have been negligent in managing fixed assets for a long time, which makes it difficult to sort out the amount, coverage and ownership of fixed assets, and a series of problems such as unsound management institutions, imperfect management systems, inefficient use of assets and weak transformation of achievements are eroding the profit of the universities and the state (Rong, J.,2020).

Article 28 of the Regulations on the Management of Fixed Assets of Administrative Institutions, which first came into effect on April 1, 2021, states that "administrative institutions shall establish and improve the performance management system of fixed assets, clarify performance indicators, and delineate performance evaluation criteria so that the performance management of fixed assets can be carried out smoothly" (The State Council of China,2021). Therefore, the state and education authorities have stricter requirements for fixed assets management in universities, and fixed assets managers of universities in Jiangxi Province should make full use of the

feedback results of fixed assets management indicators, analyze and study them, make up for the loopholes of assets management, improve asset management related systems, increase the management of fixed assets, and use them for talent training, scientific research and social services.

In summary, to enhance the level of fixed assets management in universities across Jiangxi Province, it is necessary to conduct a detailed analysis of the existing problems of fixed assets management. Subsequently, formulate targeted approaches according to the actual situation. Establishing a set of implementation approaches that are scientific and reasonable, with clear authority, responsibility, coordination, and efficient operation, is crucial.

Research Questions

This research involves the following three research questions:

1. What are components and indicators of fixed assets management of the universities in Jiangxi Province?
2. What is the current state, desired state, and priority demand level of fixed assets management of the universities in Jiangxi Province?
3. What should be approaches to enhance fixed assets management of the universities in Jiangxi Province?

Research Objectives

The primary objective of this research is to explore various factors that affect fixed assets management and provide relevant suggestions for the better development of fixed assets management in universities. It aims as the following:

1. To investigate components and indicators of fixed assets management of the universities in Jiangxi Province.

2. To explore the current state, desired state and priority demand of the fixed assets management of the universities in Jiangxi Province.

3. To develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province.

Research Significance

1. This research aims to identify practical approaches for enhancing fixed assets management of universities in Jiangxi Province. It involves conducting an in-depth analysis of the current and desired states, as well as the priority needs in fixed assets management, seeking to address key challenges. This effort will assist universities in managing and utilizing their fixed assets more effectively, thereby increasing the efficiency and value of these assets.

2. The improvement approaches proposed by this research will provide specific recommendations for policymakers and managers engaged in fixed assets management of universities in Jiangxi Province. These approaches are designed to support universities in making more informed and strategic decisions regarding their fixed assets management, ultimately leading to improved quality and effectiveness in asset management practices.

3. By evaluating the current state of fixed assets management of 3 universities in Jiangxi Province and integrating their management and practical experiences, this research aims to develop a series of effective approaches for improving fixed assets management at these institutions. These approaches will emphasize promoting efficient, transparent, and sustainable management practices for fixed assets, offering a comprehensive strategy for enhancing fixed assets management of universities in Jiangxi Province.

Research Scope

1. Scope of content

1.1 Components of fixed assets management

From the study and synthesis of documents by various academics, the components of fixed assets management consist of:

- (1) Allocation of fixed assets
- (2) Purchase of fixed assets
- (3) Registration of fixed assets
- (4) Use of fixed assets
- (5) Disposal of fixed assets

1.2 Processes of the approach development

The researcher has reviewed various documents to outline the processes of the approach development, which include:

- (1) Preparation
- (2) Investigation and Analysis
- (3) Design
- (4) Dissemination
- (5) Evaluation

2. Scope of population and sample

Phase 1: Investigate components and indicators of fixed assets management of the universities in Jiangxi Province.

Researchers invite 5 experts to evaluate the components and indicators of fixed assets management. Experts: consisting of academics, educators, and principals.

Phase 2: Explore the current state, desired state of the fixed assets management of the universities in Jiangxi Province.

The personnel include full-time staff and part-time staff of fixed assets management in 3 universities in Jiangxi Province, including Jingdezhen University, Jingdezhen Ceramic University, and Jiangxi Arts & Ceramics Technology Institute. Academic year 2023, fixed assets management full-time staff:20 people, fixed assets management part-time staff:201 people, total: 221 people.

The sample group comprises full-time and part-time personnel involved in fixed assets management from 3 universities in Jiangxi Province. Using the Taro Yamane formula, the sample was calculated and classified according to the size of the 3 universities. This resulted in a sample of 142 people, comprising 13 full-time fixed assets management staff and 129 part-time fixed assets management staff.

Researchers selected five experts from 3 universities in Jiangxi Province for interviews. These five experts are researchers and managers in the field of educational administration, each with over five years of experience in educational management and holding a master's degree or higher.

Phase 3: Develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province.

This phase will focus on developing and evaluating new approaches that can significantly enhance the efficiency of fixed assets management of universities in Jiangxi Province. The evaluation will be conducted through in-depth interviews with 5 experts, including academics, educators, and principals, who have extensive experience and knowledge in the field of fixed assets management.

The aim is to not only develop effective approaches but also to rigorously assess their suitability, utility, and feasibility for implementation within the universities of Jiangxi Province. The goal is to ensure that the developed approaches

are not only theoretically sound but also practical and applicable in the real-world context of these universities.

Conceptual Framework

In this research, the researcher documents from various academics related to fixed assets management components were studied. Components of fixed assets management and processes of the approach development to serve as a conceptual framework for research as follows:

1. Conceptual framework for the components of Fixed Assets Management

From the study and synthesis of documents by academics including Hobart, B. A. (1993), Leibowitz, M. L., Bova, A., & Hammond, P.B. (2010), Zhao Na (2011), Liu, J. and Hou, W. (2011), Karen and Conneely (2014), Bandy, G. and Baber, C.M. (2015), Li Wei (2018), Xiao L. (2020). The researcher concludes that there are 5 components of fixed assets management: 1) Allocation of fixed assets, 2) Purchase of fixed assets, 3) Registration of fixed assets, 4) Use of fixed assets, 5) Disposal of fixed assets.

2. Processes of the approach development for fixed assets management

The researcher studied documents from Education, A. (2009), Lee, N., Dossick, C. S., and Foley, S. P. (2013), Ministry of Finance (2019). Researcher concludes that there are 5 steps of the processes for the approach development: 1) Preparation, 2) Investigation and analysis, 3) Design, 4) Dissemination, 5) Evaluation.

After conducting an extensive literature review, the researcher identified five key components that collectively form the framework of fixed asset management in universities. To further elucidate these components and their interrelationships, the researcher designed a conceptual framework diagram. This diagram not only aids in systematically presenting the various elements of fixed asset

management but also reveals how the steps involved in developing approaches to fixed asset management interact and integrate into the overall management process. Below is the conceptual framework diagram, which will serve as the foundation for understanding and analyzing the complexities of fixed asset management in this research.

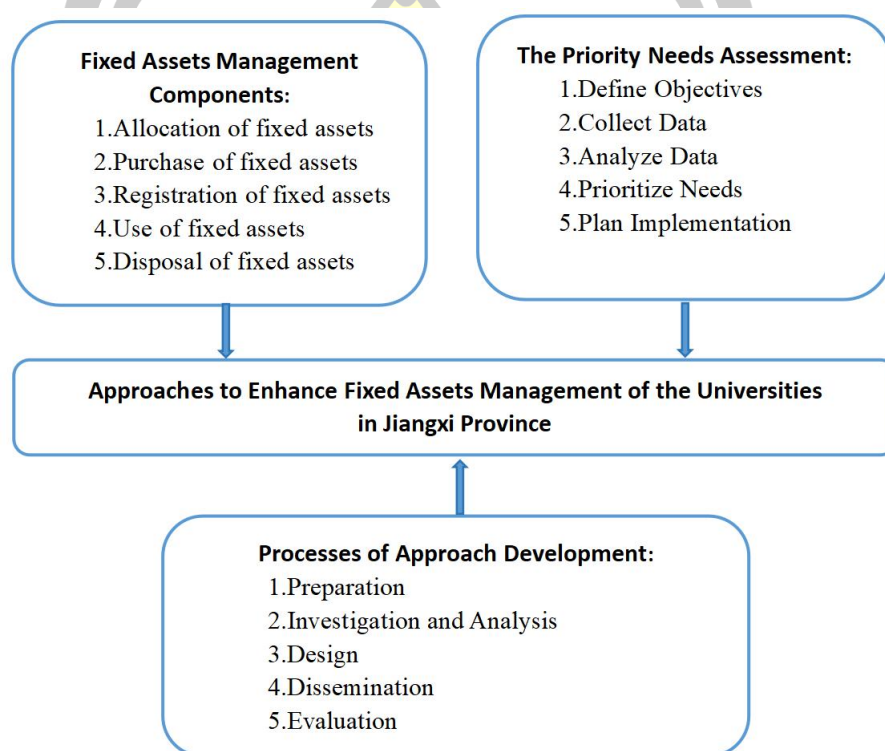


Figure 3 Research Conceptual Framework

Term of Definition

1. Asset management: Asset management is crucial to ensure the effective operation of school resources, supporting teaching, research, and service missions. This entails optimizing the management of teaching facilities, libraries, laboratories, and other resources, while also allocating sufficient resources to support faculty work. Effective management helps enhance the competitiveness and sustainable development of universities.

2.Fixed assets management: The comprehensive processes of regulating and effectively managing the acquisition, measurement, inventory, changes, and disposal of fixed assets. This encompasses the allocation, purchase, registration, use, and disposal of fixed assets, with the aim of ensuring accurate recording, reasonable utilization, and continuous appreciation of fixed assets. These efforts support the school's teaching, research, and service missions, as well as maintaining the financial stability and asset security of the university.

2.1Allocation of fixed assets: Involves the process of equipping fixed assets through transfers, rentals, and purchases, taking into account factors such as functional requirements, the condition of existing assets, and financial resources. This process adheres to the principle of aligning the function and quantity of assets with the functions of the unit.

2.2Purchase of fixed assets: Under certain conditions, colleges and universities acquire products or services from the supply market as resources for the institution, aiming to ensure the normal development of teaching activities. Procurement methods are divided into agreement procurement and government procurement.

2.3Registration of fixed assets: It involves the acceptance of purchased assets by the fixed assets management department and the recording of asset information in the university asset database. Asset information typically includes the asset name, specifications, quantity, purchase time, price, etc.

2.4Use of fixed assets: It encompasses the utilization of fixed assets for teaching and learning activities. Concurrently, the fixed assets management department coordinates the allocation of fixed assets and oversees their efficient utilization based on the needs of each department within the university.

2.5Disposal of fixed assets: It involves the transfer or cancellation of property rights of fixed assets held or utilized by the fixed assets management

department. Methods of disposing fixed assets include free transfer, sale, transfer, replacement, foreign donation, scrapping, loss, and write-off of monetary assets.

3. Approach development: A series of steps taken during the research process, including preparation, investigation and analysis, design, dissemination, and evaluation. In this process, researchers collect relevant literature and information, analyze data, develop plans, communicate research designs, and assess research results to develop a method or strategy to achieve research objectives and address research questions.

3.1 Preparation: It involves gathering pertinent documents and information in alignment with the research question and study scope before the researcher develops the approach. Literature collection encompasses the procurement of government documents, academic papers, professional journals, etc.

3.2 Investigation and Analysis: It is the process of collecting detailed information and data about the research content through literature, questionnaires, etc., and then summarizing and drawing conclusions from them.

3.3 Design: Researchers develop specific plans for achieving the research objectives, including the development mode, direction, and control indicators.

3.4 Dissemination: This stage involves the researcher disclosing the research design to a specific population and scope, and collecting accurate feedback information through communication to improve the design scheme.

3.5 Evaluation: The researcher validates the research results through dissemination and feedback from expert panels. The evaluation results determine the feasibility of the research outcomes.

4. The Modified Priority Need Index (PNI_{mod}): It can be summarized as a comprehensive tool that integrates quantitative and qualitative data to evaluate and rank the needs within an academic institution.

CHAPTER II

LITERATURE REVIEW

The second part is a literature review, where the authors organize, summarize, and draw conclusions from current relevant studies and findings. This chapter will introduce relevant management policies in China and research findings both domestically and internationally, providing readers with a comprehensive understanding of fixed assets management. The structure of Chapter 2 is as follows:

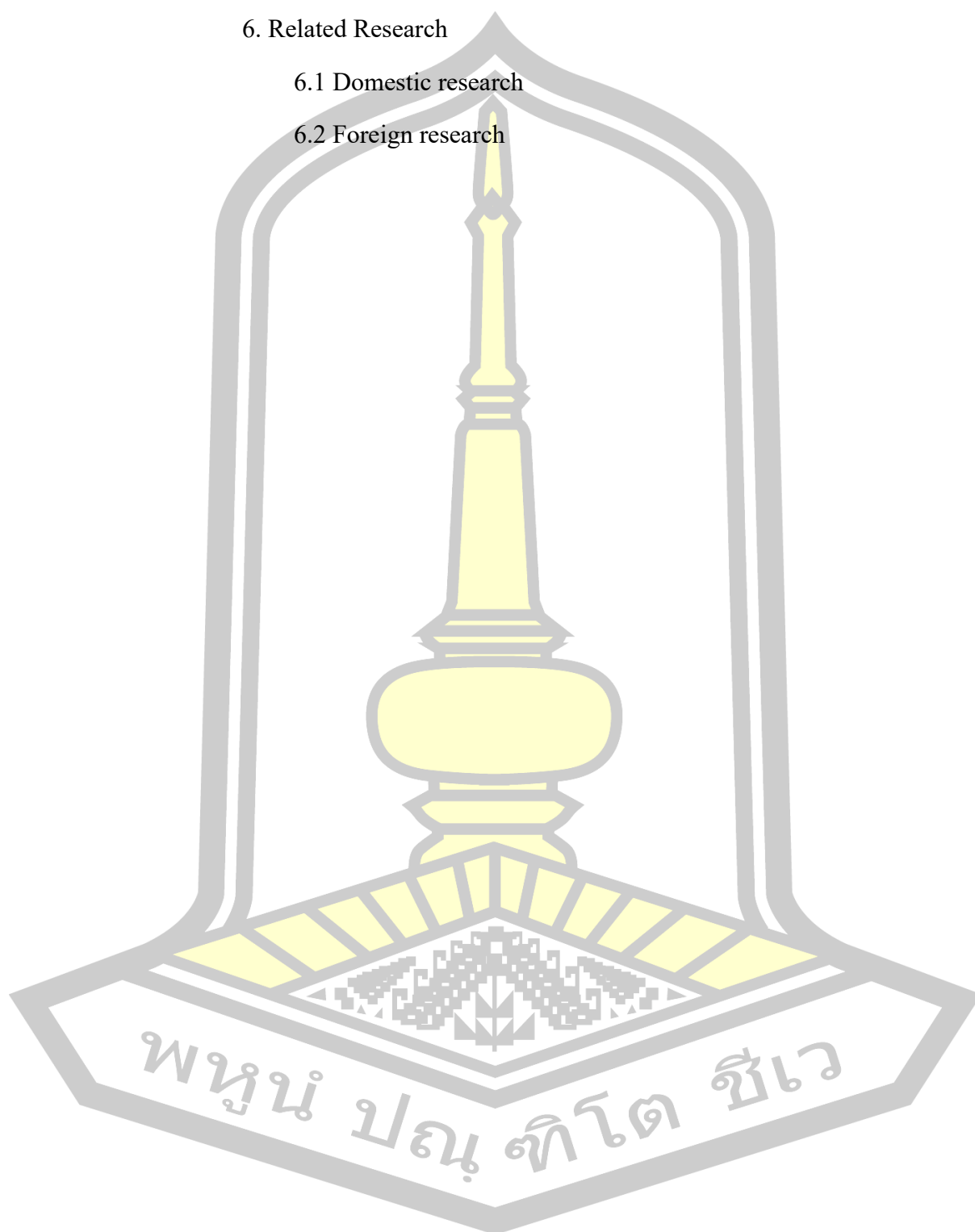
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 - 4.1 Status of the approaches for fixed assets management
 - 4.2 Processes of the approach development
5. The Modified Priority Need Index
 - 5.1 Definition of the Modified Priority Need Index

5.2 Steps in priority needs assessment

6. Related Research

6.1 Domestic research

6.2 Foreign research



1.Asset Management

1.1 Definition of asset management

Hobart, B. A. (1993) emphasized that asset management in universities entails offering high-quality education to students by judiciously utilizing a range of resources to enrich the learning experience. The effective management of these resources, which include top-notch teaching facilities, extensive library collections, and state-of-the-art laboratory equipment, plays a crucial role in enhancing students' learning outcomes and experiences.

Karen and Conneely (2014) pointed out that asset management is an important task to ensure that resources can be effectively managed, operated, and maintained to support the teaching, research, and service missions of universities. This indicates the need for comprehensive planning and management of assets to ensure optimal resource utilization, while also paying attention to risk management and financial sustainability. Effective asset management helps to enhance the competitiveness and sustainable development capabilities of universities, laying a solid foundation for their long-term development.

Kang, L. (2022) pointed out that asset management of universities involves the effective allocation and management of resources required for teaching and research activities. This indicates the need for sufficient teaching equipment, research funding, human resources, etc., to support their teaching and research work. At the same time, it also means that universities need to provide a good working environment and welfare benefits to attract and retain excellent faculty.

Summarizing the study of asset management definitions reveals that asset management is vital for the efficient operation of school resources, supporting teaching, research, and service missions. It involves optimizing the management of teaching facilities, libraries, laboratories, and other resources, as well as allocating

adequate resources to support faculty work. Effective management contributes to enhancing the competitiveness and sustainable development of universities.

1.2 Asset management theory

Liang, Y. (2018) noted that asset management theory focuses on enhancing the utilization and management efficiency of university assets. It aims to evaluate the performance of asset management and identify methods for continuous improvement and optimization.

Zhai, W. X. (2021) pointed out that asset management theory includes the application of modern technologies and tools, such as data analysis, model building, and investment software, to aid in the formulation and execution of asset management strategies.

Karen and Conneely (2014) stated that asset management theory involves the examination of industry standards and best practices in the field of asset management. It offers guidance and references to assist university managers in improving the implementation of asset management tasks.

Li, J., and Han, X. (2020) indicated that asset management theory encompasses the development and application of policies and processes for managing assets in universities. This includes the acquisition, utilization, maintenance, updating, and disposal of assets to ensure the efficiency and compliance of asset management.

In summary, asset management theory focuses on how to effectively evaluate, allocate, and manage the diverse assets of higher education institutions, encompassing assets, investments, and resources that support the universities' teaching, research, and service missions. This theoretical framework addresses various aspects, including asset valuation and pricing, risk management, optimization of asset allocation, liability management, technological innovation, and investment with social responsibility. It emphasizes a long-term, development-oriented approach.

By integrating industry standards and best practices, asset management policies and processes can be continuously refined to maximize asset value and promote sustainable development.

2.Fixed Assets Management

2.1 Definition of fixed assets management

Marx (1867) highlighted that fixed assets form the material foundation of social production and represent a significant indicator of the development of social productive forces. In the context of universities, fixed assets are essential for daily operations, typically characterized by their high value, distributed storage, diverse types, and substantial personnel turnover. Moreover, fixed assets constitute a significant portion of university expenses. Inadequate management, such as disorganized control over fixed assets, can lead to issues like duplicate acquisitions, high idle rates, and severe asset losses, resulting in unnecessary expenditure and waste for the institutions.

Tang, X. (2018) explained that managing fixed assets is a highly specialized task that requires professional personnel. Given that fixed assets typically represent a significant share of a university's total assets, ensuring their safety and completeness is of paramount importance. Losses stemming from poorly managed fixed assets can significantly exceed those associated with current assets.

The Ministry of Finance (MOF) of China, in 2019, issued the "General Principles for Enterprise Finance" and the "Enterprise Accounting Standards." These documents marked the formal establishment of the fixed assets management concept in China and defined the direction and objectives of fixed assets management research within the country. Simultaneously, comprehensive regulations were put in place for managing fixed assets, covering aspects such as recognition, acquisition, valuation,

inventory, utilization, and disposal. The goal is to ensure the accurate recording, rational utilization, and effective management of fixed assets.

According to Rong, J. (2020), the management of fixed assets in universities includes the following aspects:

1) An asset management mechanism characterized by "unified leadership, centralized management, hierarchical responsibility, and accountability" should be established and refined. This requires a clear delineation of responsibilities among departments responsible for managing fixed assets. The specific objectives of this mechanism include standardizing asset procurement procedures, dynamizing asset management, standardizing the allocation of fixed assets, regulating the disposal of fixed assets, and implementing an information system for fixed asset management. The mechanism aims to ensure the preservation, completeness, and value enhancement of state-owned assets through the rational allocation and effective utilization of fixed assets.

2) From procurement documentation, budget proposals, acquisition approvals, receipt and storage, to usage, transfer, and disposal, the entire lifecycle of fixed assets, from "acquisition" to "disposal," should be regulated.

3) It is essential to select and establish relevant indicators that align with the current situation of universities. By adopting a method that combines qualitative and quantitative approaches, building a performance evaluation index system that is structurally clear and easily implementable is crucial. Efforts should be made to achieve performance evaluation indices that support long-term goals.

4) Universities should integrate the development of the fixed assets management team into their talent development plans, highlighting the uniqueness and professionalism required for managing fixed assets. Increasing investment in human resources is crucial, adopting recruitment and employment standards similar to those of finance departments. It is essential to staff this area with

highly educated, versatile talents who are proficient in budget management, financial management, and information technology. Additionally, there needs to be a balance between the specialized knowledge necessary for managing large instruments and equipment and the professional background knowledge required for overseeing such assets.

5) Universities should enhance the digital infrastructure for managing fixed assets, which can further improve the standardization, proceduralization, transparency, digitalization, and accessibility of fixed assets management. Through digitalization and convenience, the scientific integrity of fixed assets management can be strengthened, and the effectiveness of supervision over fixed assets management can be enhanced through standardization, proceduralization, and transparency. Additionally, it enables refined and dynamic management of fixed assets, facilitating asset allocation, improving asset sharing, and thereby increasing the utilization efficiency of fixed assets.

Qiu, G. (2022) defined fixed assets management as the oversight of the entire lifecycle of fixed assets, including planning, purchasing, acceptance, registration, requisition, use, maintenance, and disposal. Fixed assets management constitutes intricate organizational work that involves the infrastructure department, finance department, logistics department, among others, necessitating collaborative management by these departments.

In summary, fixed assets management in universities encompasses a comprehensive and effective process that covers the acquisition, valuation, inventory, modification, and disposal of fixed assets. This includes the allocation, purchase, registration, utilization, and disposal of fixed assets, with the goal of ensuring precise record-keeping, judicious use, and ongoing enhancement of the value of fixed assets. This management supports the institution's teaching, research, and service missions, while also preserving the financial stability and security of the university's assets.

2.2 Policy and development of fixed assets management

2.2.1 Policy of Fixed Assets Management

Haskins, B. (2004) emphasized that enterprises should concentrate on the entire lifecycle of fixed assets, encompassing asset demand planning, procurement and contract management, asset configuration and deployment, operation and maintenance, performance management, and scrap disposal. This approach aims to maximize the value and utility of fixed assets, offering significant practical value in fixed assets management and financial management.

Middleton, W. D. (2010) explored facility management within higher education institutions, focusing on planning, maintenance and operation, investment in and evaluation of fixed assets, as well as the efficiency of facility use among other aspects.

Shu, H. (2022) discussed the theory and practice of fixed assets management, covering the basic concepts, management processes, evaluation methods, asset allocation, and investment decisions related to fixed assets management.

Lu, Q. (2021) outlined the fundamental principles, procedures, and methods of fixed assets management, emphasizing the mechanisms and practices of operating and managing assets in universities.

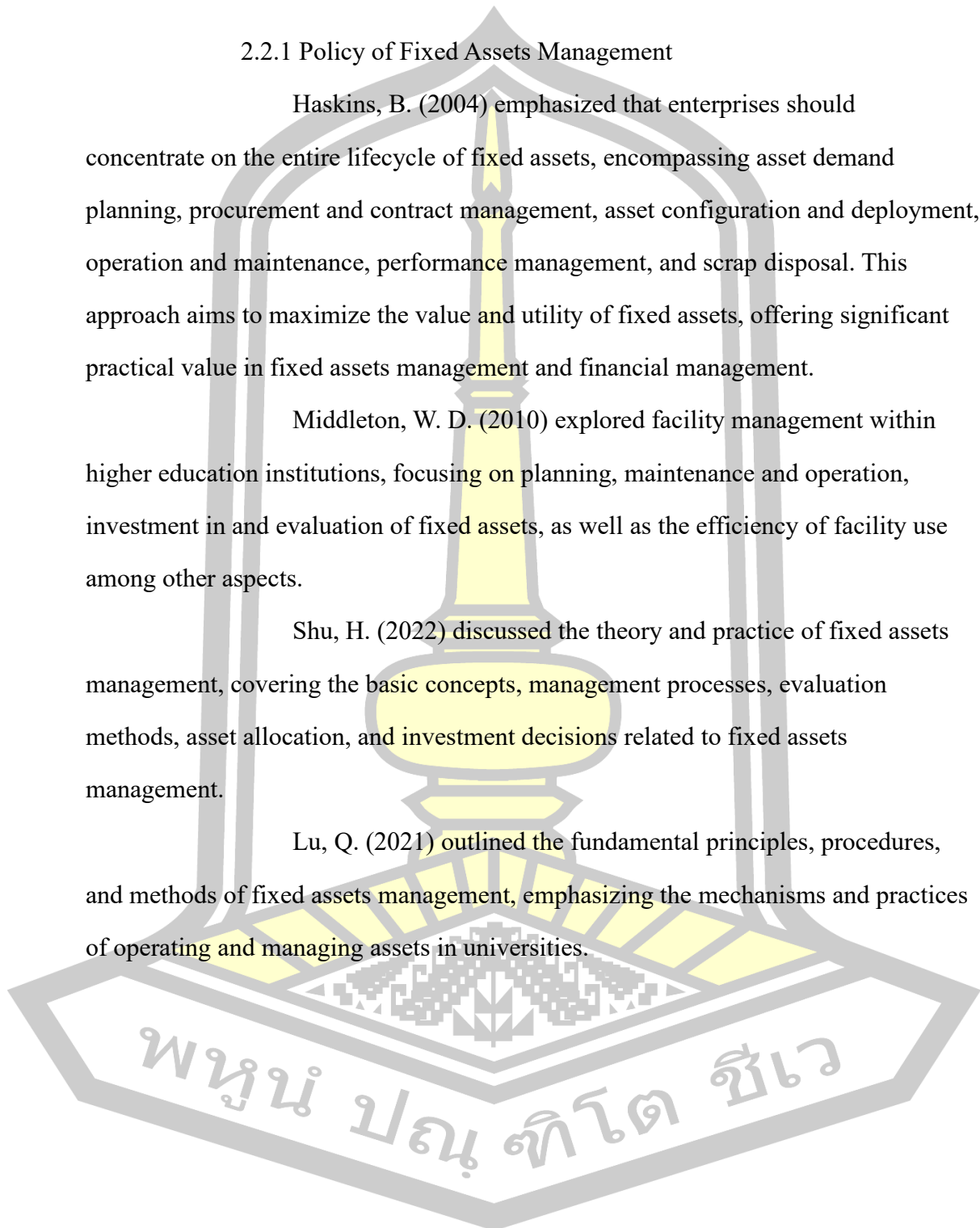


Table 1 Laws and Regulations on Fixed Assets Management in China

Time	Title
2013	“Management Regulations for Fixed Assets Management Information System of Administrative Institutions”
2015	“Government Accounting Standards - Basic Standards”
2015	“Guiding Opinions of the Ministry of Finance on Further Standardizing and Strengthening the Management of Fixed Assets of Administrative Institutions”
2016	“Government Accounting Standard No. 3 - Fixed Assets”
2017	“Several Opinions of the Ministry of Education on Standardizing and Strengthening the Management of Fixed Assets in Institutions of Higher Learning Directly under the Central Government”
2019	“Interim Measures for the Administration of Fixed Assets in Public Institutions”
2020	“Notice on Strengthening the Management of Fixed Assets in Administrative Institutions”
2021	“Approaches for the Inventory of Fixed Assets in Central Administrative Institutions”
2021	“Measures for the Administration of the Disposal of Fixed Assets in Central Administrative Institutions”
2022	“Guiding Opinions on Vitalizing the Fixed Assets of Administrative Institutions”

“The Outline of the National Medium and Long-term Education Reform and Development Plan (2010-2020)” and “The Outline of the Fourteenth Five-Year Plan (2021-2025) for National Economic and Social Development of the People's Republic of China and the Vision for 2035” clearly state:

1) Enhance the management of fixed assets, refine the management systems for the allocation, utilization, and disposal of fixed assets, prevent the loss of fixed assets, and boost the efficiency of fixed asset usage.

2) Uphold the principle of public welfare in education, augment investment in educational funding, reform and enhance the management system for fund utilization, and increase the efficiency of fund usage. Implement and broaden the operational autonomy of universities, and refine the internal governance structures of these institutions.

"The Opinions of the Ministry of Education on Regulating and Strengthening the Management of Fixed Assets in Universities under the Ministry of Education" (MOE, 2017), "The Interim Measures for Fixed Assets Management in Universities" (MOF, 2019), and "The Notice on Strengthening the Management of Fixed Assets in Administrative Institutions" (MOF, 2020) provide specific requirements for fixed assets management:

1) Enhance the management of fixed assets allocation. Building on an understanding of the existing fixed assets inventory, universities should adhere to national regulations regarding the quantity of allocations, price limits, and minimum service life of fixed assets. In alignment with their actual circumstances, they should conduct scientific assessments, while the audit departments must enforce strict control, ensure stringent savings, and establish robust asset allocation standards.

2) Standardize the purchase management of fixed assets. Enhance the communication and collaboration between the fixed assets management department and government procurement. Universities should actively promote the

integration of fixed assets management with budget management, incorporating fixed assets procurement into the budget management process. The procurement of new fixed assets must take into account the existing inventory of fixed assets, be thoroughly justified, and be included in the university's unified budget management.

3) Implement fixed assets registration management.

Regularly conduct fixed asset inventory, at least once a year, to comprehensively understand and accurately reflect the quantity, value, and utilization of fixed assets, ensuring alignment between records and actual assets. Fixed asset cards should adhere to prescribed formats, encompassing fundamental fixed assets details, financial data, and usage information. They should be dynamically updated throughout the asset lifecycle management and reflected in the annual fixed asset report.

4) Optimize fixed assets usage management. Fixed assets serve as the foundation for educational development and are essential for facilitating teaching and learning activities. Establish an internal receipt and return system for fixed assets, ensuring that recipients utilize them appropriately, maintain them adequately, and promptly report any damages to prevent misuse or wastage of public assets. In cases of personnel changes, assets should be transferred promptly according to regulations, and relevant procedures should only be undertaken after the transfer or return process is completed. Actively promote the internal transfer of fixed assets within the university and encourage asset sharing across departments, regions, and levels to enhance fixed asset efficiency.

5) Improve the management of disposal of fixed assets. The internal disposal procedures of fixed assets are clarified, and the approval procedures are strictly carried out according to the prescribed authority to dispose of fixed assets in time. For long-term accumulated fixed assets awaiting disposal, follow the "three redundancies and one large" decision-making process for collective approval and within established authority, and dispose of them to effectively solve the problem of

"difficult account settlement". Disposal of fixed assets should be conducted in a transparent, fair, and impartial manner. Fixed assets disposal should be open, fair and equitable. Sale, transfer, transfer of fixed assets should be in accordance with the rules of asset evaluation, a larger number or higher value, through the market transactions, auctions and other public ways of disposal. For disposal assets that truly lack useful value, encourage public disposal through methods such as online auctions. Disposal income, after deducting relevant taxes, appraisal fees, auction commissions and other costs, in accordance with the relevant provisions of the government's non-tax revenue collection and management of timely payment into the treasury, the implementation of "two lines of income and expenditure" management.

In summary, fixed asset management in Chinese universities encompasses theoretical frameworks, policies and regulations, asset evaluation, and management modes. These endeavors and research contents concentrate on fundamental concepts, theoretical frameworks, policies and regulations, evaluation methodologies, management modes, and asset allocation within university fixed asset management. They offer theoretical underpinnings and practical guidance, aiding universities in effectively managing and utilizing fixed assets to enhance efficiency and performance in asset management.

2.2.2 Development of Fixed Assets Management

Ma, T. (2013) described China's fixed asset management as consisting of three stages: the stage of directly introducing foreign regulations, the stage of self-development based on foreign regulations, and the stage of integrating Chinese characteristics with internationalization.

Chu, L. (2015) mentioned that China had established a highly centralized planned economy model, and the accounting system was cumbersome, difficult to understand, and overly centralized in management authority. Accounting reform had not yielded significant results, and the accounting of fixed assets had not

received sufficient attention from universities and had not been implemented effectively. Consequently, during this period, although China introduced some relevant regulations on fixed assets from the international community, they were not practically applied, and there was limited progress in constructing the fixed asset system.

Fixed assets management method: Manual ledger bookkeeping.

This method primarily relies on manual ledger bookkeeping and paper labels to categorize fixed assets, followed by recording information into books or forms. However, this approach fails to accurately document the entire lifecycle of assets, including procurement, borrowing, claiming, and returning, making it difficult to trace. Consequently, this can result in fixed asset losses, high idle rates, and repeated procurement, among other consequences. In summary, managing fixed assets in this manner presents numerous challenges.

He, Y. (2022) mentioned Deng Xiaoping's "Southern Tour Speech" and the "14th Party Congress," which advocated the reform goal of establishing a socialist market economy system and proposed standardizing the fixed asset system. Following the reform and opening-up, the transition from a planned economy system to a market economy system rendered the original accounting system obsolete. The evolving market subject status of enterprises necessitated the establishment of a new accounting system aligned with market economy principles, drawing on international practices.

Hu, G. and Zheng, Z. (2010) stated that on November 30, 1992, the Ministry of Finance issued the "General Principles for Enterprise Finance" and the "Enterprise Accounting Standards". The introduction of these two accounting systems marked a significant and foundational step forward in the construction of the fixed asset system, setting the direction and goals for fixed asset management research in

China. Additionally, the fixed asset management mode transitioned from manual ledger bookkeeping to the standalone fixed asset management mode.

Fixed assets management method: Standalone fixed asset management system. With the advent of computer technology, standalone fixed asset management systems emerged, enabling users to record fixed asset information. Barcodes could be utilized during inventory, significantly enhancing work efficiency. However, standalone management systems do not ensure real-time synchronization of fixed asset information, and the data remains disconnected, limiting the implementation of true mobile office capabilities.

Huang, X. and Zhao, S. (2014) described that the Ministry of Finance issued the "Enterprise Accounting System" and "Enterprise Accounting Standards - Fixed Assets". This new system transcended ownership and industry boundaries, establishing a unified national accounting framework. Significant changes were made to the definition, initial measurement, depreciation, subsequent expenses, impairment, and disclosure of fixed assets. The requirements for accounting verification, such as truthfulness, prudence, and actual cost valuation, were emphasized, expanding the scope of accounting professional judgment and raising the moral and professional standards for accountants. This transitioned from the standalone fixed asset management mode to the network-based fixed asset management mode.

Fixed assets management method: Network fixed asset management system. This system integrates PC and mobile applications (APP), introducing mobile office capabilities. It facilitates access, inventory, approval, and disposal functions on both mobile and PC terminals, enabling closed-loop management of fixed assets throughout their lifecycle.

Summarizing the development of fixed asset management according to various academics, fixed asset management in Chinese universities has evolved through three stages:

- 1) During the planned economy era, the management system was cumbersome and received insufficient attention.
- 2) After the reform and opening-up, the system became standardized, and standalone fixed asset management systems emerged.
- 3) In recent years, there has been a transition towards network-based systems, enabling full-lifecycle closed-loop management of fixed assets.

2.3 The components and indicators of fixed assets management

Zhao, N. (2011) explained the principles and components of fixed assets management as follows:

- 1) Allocation of fixed assets management: This involves making scientific allocation decisions considering factors such as university size and teaching level to enhance production efficiency and competitiveness.
- 2) Establishment of registration and information management systems: These systems enable real-time understanding of the quantity, value, and condition of fixed assets.
- 3) Maintenance and upkeep during use: Strengthening maintenance and upkeep ensures the normal operation of equipment, extends service life, and incorporates technological updates and renovations to enhance operational efficiency and asset level.
- 4) Disposal of fixed assets: Comprehensive considerations such as use value, market value, and disposal cost are necessary to maximize asset value

without disrupting normal school operations. Performance evaluation involves assessing and monitoring fixed assets operation.

Li, W. (2018) summarized the principles and components of fixed asset management as follows:

1) Reasonable asset allocation in universities can improve the quality of education and teaching, and promote the development of universities. Universities should formulate long-term asset allocation plans based on their own needs and development goals.

2) Universities need to strengthen the monitoring and supervision of asset use, ensure the reasonable use of assets, and prevent waste and abuse. Strengthen the maintenance and upkeep of assets, extend their service life, and reduce the occurrence of asset damage and scrapping.

3) During the disposal process, universities should pay attention to the evaluation and valuation of assets to ensure the fairness, openness, and legality of the disposal process.

Xiao L. (2020) explained the principles and components of fixed asset management as follows:

1) Universities should consider the characteristics, needs, and future development trends of their disciplines and reasonably plan and allocate fixed assets.

2) The use of fixed assets significantly impacts the operational efficiency and resource utilization efficiency of universities. Strengthening fixed asset management is essential to ensure their normal use and maintenance. Additionally, universities should focus on the reuse and sharing of fixed assets to improve resource utilization efficiency.

Liu, J., & Hou, W. (2011) summarized the principles and components of fixed asset management as follows:

1) For the purchase of fixed assets in universities, the authors analyzed the processes and standards in the procurement process and proposed a procurement model based on risk management to reduce risks in the procurement process.

2) Explored the process and methods of fixed assets registration in universities, and proposed an asset registration system based on Internet of Things technology to improve the efficiency and accuracy of the registration process.

3) Studied the disposal of fixed assets in universities and proposed a comprehensive evaluation model to help universities choose the best way to dispose of assets.

Hobart, B. A. (1993) explained the principles and components of fixed asset management as follows:

1) Conduct research and analysis on the procurement of fixed assets in universities, explore the importance of scientifically and reasonably selecting suppliers, formulating procurement plans, and evaluating procurement needs.

2) Regarding the necessity of fixed asset registration and related issues of data management, how to identify, classify, measure, and store fixed assets, and how to establish an effective registration and management system.

3) Various methods for disposal of fixed assets, including sale, scrapping, donation, and replacement, as well as relevant operating procedures and regulatory requirements, were discussed in detail.

Karen and Conneely (2014) explained the principles and components of fixed asset management as follows:

1) The procurement strategy and process of fixed assets in universities have a significant impact on the financial status and management of the school. A reasonable procurement decision requires comprehensive consideration of multiple factors, including funding budget, demand analysis, supplier selection, etc.

2) The registration of fixed assets in universities needs to establish a comprehensive information system to ensure accurate registration and tracking of assets.

3) Establish a fixed assets use management system, strengthen the maintenance and upkeep of fixed assets, and maximize the service life of assets.

Feng-Jiao, B. (2010) explained the principles and components of fixed asset management as follows:

1) Through reasonable asset allocation, universities can avoid repeated purchases and waste, maximize the utilization of financial resources, and standardize management to improve the efficiency of fixed asset procurement.

2) Establishing a unified procurement process and system, universities can reduce illegal procurement, strengthen supplier management, and thereby improve procurement efficiency. Finally, standardized management can ensure the standardized use of fixed assets.

3) By establishing user handbooks, strengthening asset supervision and maintenance, universities can prevent the abuse and damage of assets, and extend their service life. Universities should establish a comprehensive fixed asset management system, including relevant systems, processes, and personnel allocation.

Deloso, A. R. M. & Orbeta, M. (2011) explained the principles and components of fixed asset management as follows:

1) Allocation of fixed assets in universities has been defined and explained, emphasizing its importance in the development and management of universities. This process involves strategic decision-making to ensure optimal distribution of resources across various departments and functions within universities. Effective allocation fosters efficient operations and supports the overarching goals of academic excellence and institutional growth.

2) Analyzed the purchase of fixed assets in universities, including demand determination, supplier selection, and contract signing.

3) Studied the use and maintenance of fixed assets in universities, including the effective use of fixed assets and extending their service life, and implementing maintenance and upkeep strategies.

4) Explored the disposal of fixed assets in universities, including the principles, methods, and procedures of disposal, and proposed suggestions to improve disposal efficiency and achieve resource recycling and utilization.

By studying the concepts and theories of the components of fixed assets management, the researchers analyzed and synthesized the components of fixed assets management and concluded that fixed assets management has eight components, as shown in Table 2:

Table 2 Analyze and Synthesize the Components of Fixed Assets Management

Components	Academics							Frequency
	Zhao, N. (2011)	Li, W. (2018)	Xiao L. (2018)	Liu, J. and Hou, W. (2011)	Hobart, B. A. (1993)	Karen and Conneely (2014)	Feng-Jiao, B. (2010)	
Allocation of fixed assets	✓	✓	✓				✓	5
Purchase of fixed assets		✓		✓	✓	✓	✓	6
Registration of fixed assets	✓			✓	✓	✓		4
Use of fixed assets	✓	✓	✓			✓	✓	6
Disposal of fixed assets	✓	✓		✓	✓		✓	5

From Table 2, synthesizing the components of fixed assets management from various academics, the researcher concludes that there are 5 components of fixed assets management: 1) Allocation of fixed assets, 2) Purchase of fixed assets, 3) Registration of fixed assets, 4) Use of fixed assets, 5) Disposal of fixed assets.

2.3.1 Allocation of fixed assets

Zhang, F. (2022) described the allocation of fixed assets as covering an organic whole, including various asset allocation standards and a standard implementation guarantee mechanism, which involves the formulation, feedback, and improvement of various asset allocation standards.

Chen, W. (2018) pointed out that state-owned assets of the university are economic resources that can be measured in monetary terms and are possessed or used by the school, including various property, creditor's rights, and other rights. The basic characteristics of the assets of colleges and universities are as follows: it is an economic resource, which has some economic right or economic potential to provide or create objective conditions for running schools and other activities; In other words, this kind of economic resources must have the use value and can create social and economic benefits for colleges and universities. It can be calculated in money, and it is occupied and used by the various units running the university.

Varun, T. & Suseendran, G. (2021) indicated that universities belong to the management system of public institutions, which are not profit-oriented and do not need to carry out cost accounting. Therefore, universities are prone to the phenomenon of "heavy investment and light management" in the process of resource management, and blind pursuit of high standards in asset purchase. At the same time, due to the imperfect internal resource management mechanism of colleges and universities, the contradictions of weak concept of resource management, ineffective

management measures, insufficient supervision measures, unreasonable allocation of resources and low efficiency of resource utilization have become increasingly prominent. At present, the academic research on the internal resources of colleges and universities mainly focuses on the research on human resources allocation, financial management and asset management, and correspondingly puts forward the methods to solve the resource allocation of colleges and universities, that is, give full play to the input-output benefits of resources, strengthen the consciousness of state-owned assets management, implement the responsibility system of resource management, and establish high-quality resource management teams.

Table 3 Analyze and Synthesize the Indicators of Allocation

Indicators	Academics			Frequency
	Zhang, F. (2022)	Chen, W. (2018)	Varun, T. & Suseendran, G. (2021)	
Allocation standards	√	√	√	3
Establishing system	√	√	√	2
Approval process	√		√	3

From Table 3, synthesizing the indicators of Allocation from various academics, the researcher concludes that there are 3 indicators of Allocation: (1) Allocation standards, (2) Establishing system, (3) Approval process.

(1) Allocation standards

Zhang, L. (2022) described that fixed assets allocation standards serve as the fundamental basis for preparing and reviewing asset allocation budgets and implementing asset procurement. These standards typically encompass

controlling indicators such as budget ceiling, physical quantity ceiling, and minimum service life of various assets, along with relevant supporting systems. The fixed assets allocation standards of universities consist of general fixed assets allocation standards and special fixed assets allocation standards.

General fixed assets allocation standards: These standards encompass items like official vehicles, general office equipment, and office furniture. Regarding the allocation standard for official vehicles, it must adhere to the provisions outlined in the "Regulations on the Establishment and Allocation Standards of Official Vehicles for Central State Organs" (State Council, 2017). For the configuration of general office equipment and office furniture, the "Central Administrative Unit General Office Equipment and Furniture Configuration Standards" (Ministry of Finance, 2016) are generally followed. However, adjustments downward can be made based on the actual situation of the school for certain fixed asset types, quantities, and price standards.

Configuration standards for special fixed assets: These standards cover assets related to teaching, research, and social service, including teaching and research facilities, equipment, and other special facilities and equipment, as well as teaching and research rooms. To ensure a balance in the technical indicators of special assets within the main line of asset management, special asset allocation standards are formulated, considering relevant technical indicators for special professional needs. The university should refer to the "Several Opinions on Further Improving the Policies of Central Financial Research Projects and Funds Management" (State Council, 2016) and the "Notice of the State Council on Several Measures to Optimize the Management of Scientific Research and Enhance the Performance of Scientific Research" (State Council, 2018). The establishment of fixed assets, including teaching fixed assets, scientific research fixed assets, and social

service fixed assets, should also take into account the university's key majors and its graded and classified development plan.

In addition, the university has established fixed assets allocation standards for teaching, research, and social service fixed assets to enhance functional matching and efficiency in asset allocation.

(2) Establishing system

Zhai, W. X. (2021) emphasized that for the effective implementation and enforcement of fixed assets allocation standards in universities, it is crucial to establish a comprehensive management and assurance system. Without such a system in place, the standards risk being nothing more than mere documents "painted on the wall and locked in the cabinet," lacking binding and deterrent effects on fixed assets management.

To address this, universities should institute specialized systems for managing fixed assets allocation, compensating for asset damage and loss, demonstrating major asset allocations, and supervising asset allocation. It is essential for universities to clearly define the approval authority for fixed assets allocation, delineate responsibilities for asset damage and loss, establish accountability mechanisms for asset management, and set procedural and physical norms. Instances of acquiring assets beyond established standards should be met with punitive measures against the unit and the responsible individuals to uphold the authority of fixed assets allocation standards.

Furthermore, there should be a focus on designing a human-centered operational system, wherein the efficient utilization of assets and the prevention of waste become inherent behaviors among all employees. This approach aims to foster a positive organizational culture where adherence to asset allocation standards is a conscious and collective effort, thereby creating an environment conducive to the effective operation of the standards system.

(3) Approval process

"Central Administrative Unit General Office Equipment and Furniture Configuration Standards" (Ministry of Finance, 2016) delineated the approval process as follows:

a. Configuration Application: Each department or individual within the university submits an application for fixed assets configuration to the fixed assets management department. The application should include details such as the name, specifications, quantity, budget, and reasons for the requested configuration.

b. Configuration Audit: The fixed asset management department conducts a thorough review of the configuration application. This review encompasses factors such as whether the price of fixed assets exceeds the established standards and whether the quantity of fixed assets exceeds the total available configurations.

c. Procurement Method: The finance department determines the procurement method for fixed assets based on their classification and budget allocation.

2.3.2 Purchase of fixed assets

Wu, J. (2011) described the purchase of fixed assets as a comprehensive project characterized by stringent policies, high professionalism, and broad involvement. It not only impacts the legitimate rights and interests of bidding parties but also reflects on the integrity and ethical standards of universities. With the evolution of China's education system and the expansion of school sizes, the procurement approach for fixed assets in universities has shifted from traditional agreement-based procurement to government procurement.

Yu, H. (2022) emphasized that government procurement, being a significant component of government financial expenditures, directly influences the

efficiency of financial resource utilization. This, in turn, affects the equitable allocation of public resources. Administrative institutions in China typically conduct procurement through unified government procurement methods, which not only cater to the diverse needs of administrative operations but also play a crucial role in ensuring the smooth functioning of these institutions.

In the process of regulating government procurement activities, administrative institutions must first establish the groundwork by filing government procurement plans in accordance with relevant laws. Throughout budgeting, planning, and procurement implementation, adherence to prescribed approval procedures is essential to ensure compliance with legal norms.

Furthermore, when formulating specific procurement plans, each department within administrative institutions should determine procurement scale and quantity based on their operational requirements. Subsequently, selecting the appropriate procurement method and releasing accurate government procurement information becomes paramount.

Lastly, standardizing government procurement activities involves meticulously recording the entire procurement process. This includes archiving government procurement budgets, plans, approval documents, bidding materials, and other relevant documents. Timely documentation and organization of business information facilitate subsequent inspections, ensuring transparency and accountability in procurement processes.

Liu, L. (2018) highlighted that the primary source of income for Chinese colleges and universities is financial allocation, which is crucial for meeting the demands of teaching, research, and operational services. Procurement of equipment and materials by colleges and universities typically follows the bidding procurement method. Consequently, the acquisition of equipment and materials necessary for teaching, scientific research, and capital construction projects

constitutes a significant aspect of the bidding and procurement process. However, it's worth noting that as regular universities, a substantial portion of the equipment in the annual procurement plan may not meet the bidding standards. In such cases, procurement is often carried out through inquiry-based methods.

Table 4 Analyze and Synthesize the Indicators of Purchase

Indicators	Academics			Frequency
	Wu, J. (2011)	Yu, H. (2022)	Liu, L. (2018)	
Agreement procurement	√		√	2
Government procurement	√	√	√	3

In synthesizing the indicators of purchase from various academic sources, the researcher identifies three key indicators: (1) Agreement procurement, (2) Government procurement.

(1) Agreement procurement

Wang, G. and Chen, G. (2021) outlined that agreed procurement involves directly soliciting quotations from more than three suppliers for the items to be procured. Based on these quotations, the purchasing unit compares them and determines the transaction supplier according to the principle of the lowest price. This procurement method boasts a simple and convenient procedure, enhancing procurement efficiency and meeting the stringent time constraints of certain procurement items.

On the other hand, Yao, M. (2017) summarized that the agreed procurement method is primarily suitable for procurement projects characterized by uniform specifications and standards of the goods to be procured,

adequate spot supply, and small procurement amounts. However, it also entails certain risks, such as insufficient standardization of procurement, lack of organizational rigor, and limited binding force on suppliers.

(2) Government procurement

Gong, H. (2021) delineated that the government procurement and fixed assets management activities of institutions involve transferring the traditional authority of the institutions themselves to conduct procurement and fixed assets management to the government. This entails having the government oversee centralized procurement processes.

In alignment with this perspective, Li, S. (2000) emphasized the importance of vigorously implementing government procurement and introducing competition mechanisms into the procurement process. These measures are crucial for universities to adapt to the requirements of the market economy, as they help broaden procurement channels, optimize procurement quality, align procurement funds, and reduce procurement costs. Additionally, they serve as effective means to regulate procurement behavior, strengthen procurement supervision, and mitigate wasteful phenomena and corruption.

Yue (2015) outlines government procurement in universities as the utilization of financial funds to procure goods, works, and services within the centralized procurement catalog established by law or above the procurement limit. It predominantly adheres to regulations such as "the Implementation Regulations of the Tendering and Bidding Law of the People's Republic of China" (State Council, 2020), "the Government Procurement Law of the People's Republic of China" (State Council, 2015), and their implementation regulations. Government procurement encompasses various methods, including open bidding, invited bidding, competitive negotiation, competitive consultation, inquiry procurement, and single-source procurement.

a. Open Bidding: This method involves inviting unspecified suppliers to participate in bidding by issuing a bidding notice in accordance with the law. While it provides an equal opportunity for all capable suppliers to compete, open bidding entails larger bidding workload, longer time requirements, and higher bidding costs. It remains the primary procurement method for government procurement.

b. Invited Bidding: In this approach, the purchaser randomly selects more than three qualified suppliers and invites them to participate in the bidding process. Compared to open bidding, invited bidding involves fewer suppliers, less bidding workload, and can save time and costs. It is suitable for procuring goods or services with special characteristics or when open bidding costs are disproportionate to the project's total value.

c. Competitive Negotiation: This method entails the purchaser or agency inviting three or more qualified suppliers to negotiate procurement matters. Projects meeting certain conditions can undergo competitive negotiation after approval.

d. Competitive Consultation: The purchaser or agency invites more than three qualified suppliers to consult on procurement matters. Projects meeting specified conditions can undergo competitive consultation with approval.

e. Inquiry Procurement: The purchaser or agency invites more than three qualified suppliers to provide quotations for goods procurement. It is suitable for government procurement projects with uniform specifications, sufficient spot sources, and minimal price fluctuations.

f. Single-Source Procurement: In this method, the purchaser directly selects a supplier and negotiates an agreement for goods or services provision.

Table 5 The Difference of Purchasing Methods

Bidding method	Whether to limit the number of suppliers	Whether there is an evaluation committee	Whether technical indicators can be changed	Whether the funds can be varied	Whether the lowest bid wins
Open bidding	No	Yes	No	No	No
Invited Bidding	Yes	Yes	No	No	No
Competitive negotiation	Yes	Yes	Yes	Yes	Yes
Competitive consultation	No	Yes	No	No	No
Single-source procurement	--	No	No	No	--
Inquiry procurement	Yes	Yes	No	No	Yes

2.3.3 Registration of fixed assets

MOF (2020) indicated that fixed assets registration means that universities strictly adhere to the requirements of the government accounting standards system and other regulations. They establish fixed asset books according to the regulations, promptly account for changes in fixed assets, and regularly reconcile with fixed asset cards to ensure consistency between the accounts and the cards. To fully grasp information on the quantity, value, and usage status of fixed assets, universities strictly control the acceptance of fixed assets, regularly conduct fixed assets inventory, and promptly update fixed asset information.

Ma, J., Sun, Q., and Peng, M. (2023) pointed out that the assets of universities mainly include scientific research equipment. Therefore, the core of asset

management lies in the management of scientific research equipment. Registration is a crucial process in the management of scientific research equipment. Newly established universities face unique challenges in the registration of fixed assets, despite having a high starting point and strong adaptability in asset management.

Shu, H. (2022) described leveraging information technology for asset registration management. All asset users (departments) and managers (departments) of the school are integrated into the information system to conduct online control over the management process of fixed assets. Through the asset registration management system, asset information becomes transparent and easy to query. The system includes a responsible classification module to expedite the inventory process. All department asset administrators and faculty members can log in to the asset registration management system to directly handle equipment information updates, disposal applications, and approvals. Personal Digital Assistant (PDA) handheld terminals are used for review purposes. After each department's self-inspection, the asset management department employs PDAs to scan asset barcodes for duplicate copies, thereby improving work efficiency.

Table 6 Analyze and Synthesize the Indicators of Registration

Indicators	Academics			Frequency
	MOF (2020)	Ma, J., Sun, Q., and Peng, M. (2023)	Shu, H. (2022)	
Fixed assets acceptance	√	√		2
Fixed assets inventory	√		√	2
Establishment of fixed assets ledger	√	√	√	3

Synthesizing the indicators of registration from various academics, the researcher concludes that there are 3 indicators: (1) Fixed assets acceptance, (2) Fixed assets inventory, and (3) Establishment of fixed assets ledger.

(1) Fixed assets acceptance

Ma, T. (2020) described the acceptance of fixed assets as the process of verifying and confirming the quantity and performance indices of the actual received assets according to the standards agreed upon in the procurement contract. To ensure that the acceptance of fixed assets is conducted in a structured, standardized, and regulated manner, the university clarifies the acceptance procedures, composition of the acceptance team, and acceptance responsibilities by establishing a fixed assets acceptance system.

a. Acceptance procedure involves the submission of an acceptance application by the using department to the asset management department, followed by preliminary inspection and re-inspection conducted by both departments.

b. The acceptance team must be composed of staff from the using department, the asset management department, and supervisory staff (Ren, 2020). Additional staff from relevant departments or professional experts may be included based on the specific requirements of the acceptance project.

c. Acceptance duties include:

- Staff from the user department check the type, quantity, and function of the goods against the procurement contract.

- The staff of the asset management department will review the specifications, parameters, quantity, and other information of goods against the procurement contract.

- Supervisors do not directly participate in the inspection and acceptance work but oversee whether the inspection and acceptance process of the acceptance team members is irregular or illegal.

(2) Fixed assets inventory

Wang, C. M. (2018) explained that fixed assets inventory is essential for reflecting the possession and utilization state of state-owned assets in universities. It is considered a fundamental and routine task in asset management, significantly contributing to ensuring the safety and integrity of school assets, rationalizing budgeting, and enhancing resource allocation efficiency. Following the approaches outlined in the "Approaches to the Inventory of Fixed Assets in Central Administrative Institutions" (State Council, 2020), the core of fixed assets inventory work in universities involves physical inventory, verification, and making account adjustments.

Li et al. (2020) highlighted several challenges faced in the fixed assets inventory work in universities amid the increasing investment in higher education:

a. Separation of fixed assets and financial management:

Lack of regular reconciliation between the fixed assets management department and finance department leads to discrepancies between fixed assets data and financial data.

b. Incomplete and inaccurate information of fixed assets:

Standardization issues during data entry result in incomplete information; changes in fixed assets transfer were not properly documented, and updates regarding storage location and users are not promptly made.

c. Fixed assets inventory surplus and loss:

Assets acquired without following acceptance and registration procedures lead to surplus, while poor management and unclear responsibility and authority result in asset loss.

(3) Establishment of fixed assets ledger

Yang, G. (2022) explained that the fixed assets ledger serves as the foundation of fixed assets management. The information contained within the fixed assets ledger not only directly impacts the management of fixed assets in

universities but also influences the statistical and summary outcomes of fixed assets information in subsequent stages. The establishment of a fixed assets ledger in universities encompasses both fixed assets confirmation registration and fixed assets information registration.

2.3.4 Use of fixed assets

Ministry of Finance (2022) indicated that state-owned assets of administrative institutions are the material basis and important guarantee for the development of the Party and the State. In recent years, the scale of state-owned assets of administrative institutions has been growing and the management level has been improving, but there are still phenomena such as insufficient coordination and ineffective use of some assets. The general requirements for the use and management of fixed assets in schools are: clear ownership, safety and integrity, tracking management, focus on performance, to ensure the normal operation of schools and business development needs, to achieve the full use of fixed assets, to give full play to the use of assets, and to strictly implement the norms for the use of fixed assets.

Zhang, H. (2017) pointed out that teaching and research personnel should be encouraged to make full use of fixed assets, especially large instruments and laboratory resources. Through the sharing mechanism, promote the flow and sharing of assets between different disciplines and teams, and improve the efficiency of asset use. Promote the transfer of assets within the school to avoid repeated purchase and waste of resources. For example, an asset sharing platform should be established to encourage the cooperative use of assets across disciplines and departments.

Wang, X. L. (2022) pointed out that the university should improve their operational skills and maintenance awareness according to their teaching and scientific research needs. Encourage teaching and research personnel to use fixed assets for innovative practice, such as interdisciplinary and interdisciplinary research

project cooperation, to promote the full use of assets and value play. At the same time, strengthen the training of users, regular maintenance, to ensure the normal operation of assets and extend the service life.

Table 7 Analyze and Synthesize the Indicators of Use

Indicators	Academics			Frequency
	MOF (2020)	Ma, J., Sun, Q., and Peng, M. (2023)	Shu, H. (2022)	
General fixed assets use	√	√		2
Special fixed assets use	√	√	√	3
Fixed assets transfer	√	√	√	3
Fixed assets leasing	√	√		2

Synthesizing the indicators of fixed assets use from various academics, the researcher concludes that there are 4 indicators: (1) General fixed assets use, (2) Special fixed assets use, (3) Fixed assets transfer, and (4) Fixed assets leasing.

(1) General fixed assets use

Ministry of Finance (2022) emphasized that the asset management department of the university should ensure a comprehensive and accurate understanding of asset usage. This entails strengthening the feasibility of asset allocation and reducing the allocation of existing assets that can meet business requirements through functional tapping and repair. Additionally, assets that retain value upon expiration should continue to be utilized to their fullest potential.

(2) Special fixed assets use

The Ministry of Finance (2022) specified that the asset management department of universities should comprehensively and accurately grasp the usage status of special assets. Regarding special assets, it is essential to enhance the feasibility of asset allocation by exploring their functionalities and conducting repairs, thereby reducing the allocation of existing assets capable of meeting business work requirements. Special assets that remain valuable upon expiration should continue to be utilized to ensure their full utilization.

a. File management: Establish a comprehensive archive for special fixed assets. For large equipment with a unit cost of 200,000 yuan or more, technical tests and documentation acceptance should be conducted during acceptance. Equipment handbooks, procurement documents, and acceptance-related information should be preserved.

b. Use training: Training on the job should be provided for the use of special fixed assets. Individuals without proper training or those who fail training sessions should not operate the machinery. When students operate such equipment for the first time, teachers or laboratory technicians must be present to offer detailed explanations and on-site guidance. Individuals who have not yet mastered operating techniques or do not understand equipment performance and usage methods should refrain from moving the equipment without proper authorization.

c. Safe use: The department responsible for using special fixed assets should develop corresponding operation procedures, detailing equipment switch operations, usage steps, and safety precautions to ensure personal and equipment safety. These operating procedures should be prominently displayed near the equipment and protected from damage. Regular inspections of equipment safety should be conducted by the department, and any identified safety hazards should be promptly rectified.

d. Dynamic monitoring: The department using special fixed assets should monitor and maintain daily usage, keeping detailed records of equipment usage, including timestamps, user information, and operation logs. Additionally, maintenance and repair activities should be documented for each piece of equipment.

e. Performance evaluation: Universities and departmental users should enhance monitoring of specialized fixed asset usage, gradually establishing a performance evaluation mechanism. This evaluation process should be integrated into the assessment criteria for departmental functional objectives, project management, asset and laboratory management, and other related tasks.

(3) Fixed assets transfer

"The Guidance on Revitalizing State-owned Assets of Administrative Institutions" (Ministry of Finance, 2022) outlines requirements for fixed assets transfers:

a. Promoting asset sharing and collaboration: Universities are mandated to integrate national major research infrastructure and large research instruments into the national network management platform for research facilities and instruments. These assets should be made available to the broader community for sharing through the platform. Utilizing industry asset management principles, eligible assets for sharing and collaboration should be identified, including but not limited to instruments and equipment, cultural and sports facilities, software assets, and data resources. Competent departments in education, health, science and technology, culture, and sports are tasked with establishing mechanisms for asset sharing and collaboration within their respective industries.

b. Enhancing asset transfers: Inefficient and underutilized assets within the higher education sector will be prioritized for transfer and utilization within the sector. Assets deemed inefficient and underutilized but possessing high

value and broad applicability should be actively considered for cross-departmental, cross-regional, and cross-level asset transfers. Assets requiring renewal for technical reasons, yet still possessing value, should be transferred to units and departments with lower technical requirements by adjusting their use, thereby maximizing asset effectiveness.

(4) Fixed assets leasing

"On Further Strengthening the Leasing and Lending of State-owned Assets" (Ministry of Education, 2020) outlines requirements regarding the leasing of fixed assets:

a. Universities are required to exercise strict control over the leasing of fixed assets, with a principle that assets should not be lent without compensation. Idle assets should be revitalized through transfer to enhance asset utilization efficiency, while office space rental is strictly prohibited unless it serves the needs of teaching, scientific research, and career development.

b. Universities must centralize fixed asset rental management to prevent fragmented management and unclear responsibilities, ensuring adherence to relevant policies. Fixed asset rentals must strictly adhere to regulations from the Ministry of Finance and the Ministry of Education regarding state-owned asset management. Feasibility demonstrations should be strengthened, and decision-making procedures must be fulfilled before seeking approval or registration from the Ministry of Education and the Ministry of Finance.

c. Generally, fixed asset leasing in universities should undergo public bidding and leasing, with rental prices determined through evaluation or asset assessment if necessary to ensure fairness and transparency. The rental period should not exceed five years, and lessees are prohibited from subletting during this period. Upon the expiry of the lease, direct renewal is prohibited, and relevant management procedures must be followed again in accordance with regulations.

d. Income generated from asset leasing should be incorporated into the university budget, subject to unified accounting and management in accordance with relevant provisions of state-owned asset management and government accounting standards systems.

2.3.5 Disposal of fixed assets

Liu, J., X., Lang, L., & Qian, C. (2020) pointed out that the disposal of university assets is the final stage in the entire life cycle of state-owned assets of public institutions (purchase, use, and disposal), which is related to the material basis of the sustainable development of universities and is of great significance to the development of the university.

(1) To ensure the preservation and appreciation of university assets and the optimization of asset structure, we can effectively improve the quality of education and promote the healthy development of education.

(2) The standardized disposal of non-performing assets of colleges and universities reflects the university's ability to save funds and also demonstrates the level of asset management.

(3) The refinement of the asset classification system and the standardization of the asset disposal process can help the decision-making level of the university to grasp the capital investment of the university's teaching, scientific research, management, and other facilities, and can improve the accuracy of decision-making.

Guo, J. (2022) described disposal of fixed assets in universities as a fundamental measure to prevent the loss of state-owned assets, optimize asset utilization, and facilitate the smooth development of various initiatives in universities. "The Regulations on Administration of State-owned Assets for Administrative Purposes" clearly stipulates that the asset management departments of universities should dispose of state-owned assets in accordance with state regulations.

Guo, G., and Yu, L. (2020) pointed out the importance of establishing a fixed assets disposal system to enhance the management effectiveness of asset scrapping and disposal. Improving the efficiency of asset disposal and reclaiming the space occupied by scrapped assets is beneficial for the normal progression of teaching and research activities in universities. Reasonable and standardized disposal of assets can effectively reduce the additional costs associated with maintaining equipment and instruments that have reached the end of their useful life, thereby minimizing unnecessary consumption of manpower and material resources.

Table 8 Analyze and Synthesize the Indicators of Disposal

Indicators	Academics			Frequency
	Liu, J., X., Lang, L., & Qian, C. (2020)	Guo, J. (2022)	Guo, G., and Yu, L. (2020)	
Disposal scope	√	√	√	3
Disposal methods and procedures	√	√	√	3

Synthesizing the indicators of disposal from various academics, the researcher concludes that there are 2 indicators: (1) Disposal scope, (2) Disposal methods and procedures.

(1) Disposal scope

Kang, L. (2022) outlined the circumstances under which fixed assets of universities should be disposed of:

- a. Fixed assets that require elimination or are irreparable, lacking repair value due to technical reasons;
- b. Fixed assets associated with abnormal losses such as inventory losses;

c. Fixed assets that have surpassed their useful life and can no longer meet operational requirements;

d. Fixed assets damaged or lost due to natural disasters and other force majeure events;

e. Fixed assets transferred due to departmental division, merger, restructuring, revocation, change in affiliation, or partial functional or business adjustments;

f. Fixed assets undergoing changes in property rights;

g. Other fixed assets necessitating disposal in accordance with relevant state regulations.

(2) Disposal methods and procedures

Chinese Ministry of Finance (2017) outlined the disposal methods and procedures of fixed assets as follows:

a. Transfer without compensation: This involves changing the possession and use rights of assets by transferring them without compensation, while ensuring that the nature of the fixed assets remains unchanged.

b. External donation: This entails voluntarily donating fixed assets possessed and used by the university to legal recipients without compensation, in accordance with the Law of the People's Republic of China on Donation for Public Welfare (State Council, 1999).

c. Transfer: This involves changing the possession and use rights of fixed assets and generating income for universities.

d. Replacement: This refers to the exchange of assets between universities and other units with fixed assets. Typically, this process does not involve monetary assets or only involves a small amount of monetary assets used to cover price differences. Asset replacement in universities should be based on the

appraisal value confirmed by the asset appraisal report approved or filed by the competent department, serving as the reference basis for replacement consideration.

e. Obsolescence: This entails disposing of fixed assets that need to be eliminated or cannot be repaired, lack repair value due to technical reasons, or have surpassed their service life and can no longer meet operational needs, in accordance with relevant regulations or as identified by relevant departments or experts.

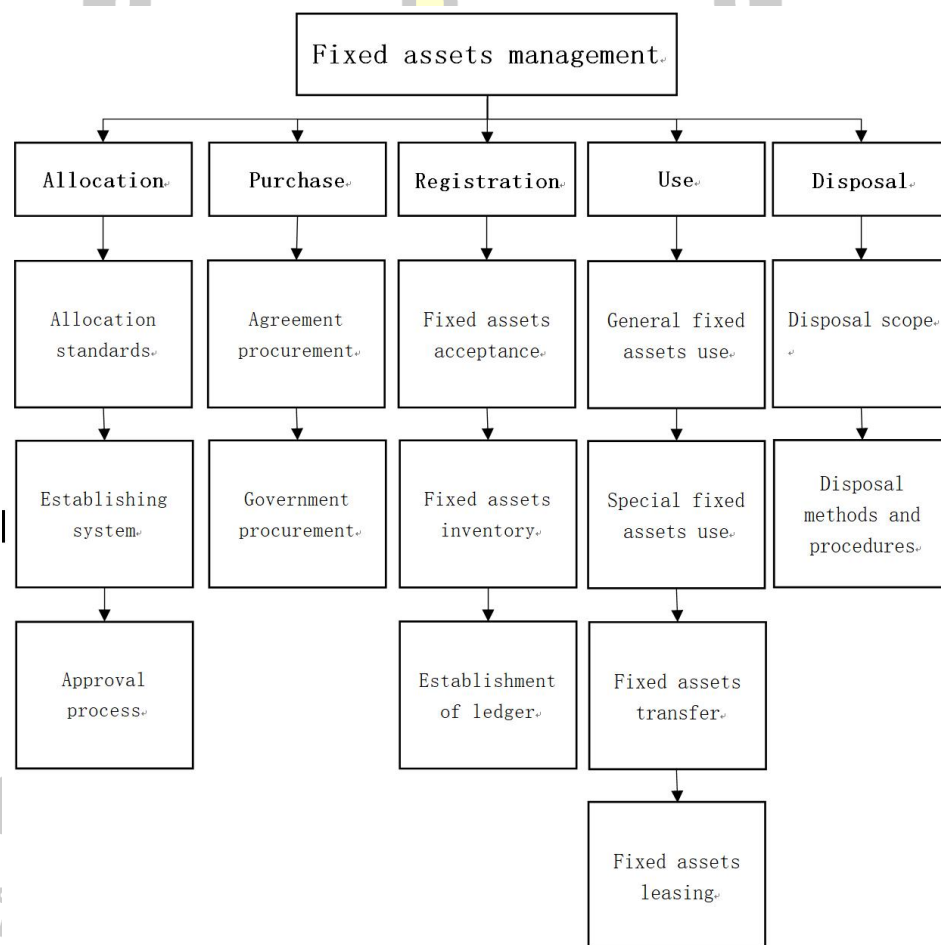


Figure 4 Components and Indicators of Fixed Assets Management

3. Context of Fixed Assets Management of The Universities in Jiangxi Province

3.1 The current state of fixed assets management of the universities in Jiangxi Province

According to Yu, L. (2022), most universities have established management systems in line with asset management requirements. However, these systems lack comprehensiveness, rigor, and ease of implementation. They tend to be too macroscopic, with insufficient integration between various asset management systems and unclear responsibility assignments. This leads to disjointed and challenging control across departments. Moreover, these systems are not regularly revised, supplemented, or adapted to new situations, resulting in aging, outdated, or incomplete frameworks that fail to meet real-world management needs. Additionally, there is a lack of clear workflow norms in the fixed asset management process.

Similarly, Zhang, B. (2020) highlighted that universities have formulated management systems aligned with asset management requirements. Nevertheless, these systems suffer from the same deficiencies outlined.

Wang, X. L. (2022) emphasized that although universities have established asset management departments and allocated corresponding personnel, there exists a mismatch in staffing, both in terms of quantity and professional background. Secondary units lack full-time asset management personnel, leading to the arbitrary assignment of part-time asset management roles to party secretaries or laboratory administrators without defined job requirements or selection criteria. These part-time managers often lack professional knowledge in equipment and asset management and face time constraints that impede effective asset management. Moreover, the perception of fixed asset management as trivial and complex, coupled with limited recognition and promotional opportunities, contributes to low motivation among managers, further diminishing management effectiveness.

Additionally, Liu, N. (2015) noted that various funding sources, including academic affairs, discipline construction, personnel, and scientific research departments, contribute to fixed asset acquisition in universities. However, this decentralized approach fosters a culture where teaching and research units, platforms, and teams prioritize acquiring additional fixed assets over sharing or collaborating on existing ones. Consequently, the strengthening of rights regarding the "purchase, use, and disposal" of fixed assets by these entities complicates transfer and sharing processes.

In summary, fixed assets management in universities faces challenges arising from a mismatch between management systems and complex needs, insufficient professional staffing, and inaccurate data. Addressing these challenges requires comprehensive reforms, including personnel training and technological infrastructure investments, to ensure accurate and efficient management of university fixed assets.

3.2 Factors affecting of fixed assets management

1) Management system

Comenius emphasized that the system is the "soul" of all school work. Where the system is stable, everything will be stable; where the system is shaky, everything will be shaky; where the system is loose, everything will be loose and chaotic. The system plays an indispensable role in resource allocation, relationship adjustment, behavior regulation, goal implementation, task promotion, and conflict resolution in higher education.

According to Wei, L. (2015), the fixed assets management system in many universities is outdated. Due to scattered management organizations, many universities have poor implementation of management systems or lack them altogether. Without a well-established management system, it becomes challenging to

effectively carry out fixed assets management in universities and to sustain their development.

In summary, the fixed asset management structure in universities is decentralized, involving multiple departments such as academic affairs, finance, logistics, and infrastructure, all of which play a role in managing fixed assets. However, each department may have different sources, methods, and utilization of statistical data, making statistical work challenging for higher-level departments and schools. This hinders the realization of unified management in universities.

2) Management mode

Yan, X. (2018) noted that the pace of informationization construction in fixed assets management within universities is rapidly accelerating. The traditional extensive management mode is gradually transitioning towards informationization and refinement. The fixed asset management information system has become an indispensable component of daily management in universities, leading to significant improvements in asset management efficiency.

According to Ma, T. (2020), in the traditional fixed assets management process, staff are burdened with extensive data collection tasks, which are complex and prone to errors. The introduction of information technology allows for the utilization of technical advantages to collect and analyze big data comprehensively and swiftly. This facilitates the collection and analysis of corresponding data, enabling the generation of reliable data analysis materials. This, in turn, provides decision support and a strong foundation for college asset managers to make informed decisions.

Liu, W. (2017) pointed out that the traditional fixed assets management mode in universities is no longer sufficient to meet the actual needs of asset management. There is an evident lack of effort in asset management within universities.

In summary, universities must enhance the management of asset management informatization construction from a macro perspective. This involves strengthening the optimization and research and development of system functions according to specific system demands, and continuously promoting technical updates and progress. These efforts aim to elevate the asset informatization construction of universities to a higher level continually.

3) Management team

Liu, S. and Fang, L. (2021) emphasized the importance of establishing a responsible, principled, service-minded, and technically competent asset management team to enhance asset management efficiency, achieve optimal asset allocation, ensure asset safety, prevent loss of state-owned assets, and ultimately preserve and increase the value of university assets.

Yang, J. (2021) highlighted the deficiency in professional fixed assets management personnel within universities, noting their weak awareness and insufficient competence in fixed assets management, which falls short of meeting national requirements.

Zhao, W. (2018) underscored the complexity, liquidity, and diversity of fixed assets in universities, necessitating asset managers to possess extensive knowledge and profound reserves. Without a competent management team, achieving efficient and dynamic fixed assets management in universities remains a challenge.

In summary, the fixed assets management team within universities plays a crucial role in school asset management, serving as a human factor that significantly impacts the effectiveness of fixed assets management.

4) Management assessment mechanism

Zhang, Y. (2020) emphasizes that the implementation of reward and punishment mechanisms for fixed asset management in universities is crucial for

incentivizing institutional system construction and execution, thereby enhancing the actual effectiveness of fixed asset management.

Liu, Y. (2018) highlighted that many staff members in universities lack a strong understanding of fixed assets and a sense of ownership, focusing more on asset ownership rather than effective asset management.

Kang, F. (2019) observed that the management of fixed assets in universities is still rudimentary and lacks a robust management assessment mechanism. This situation results in an emphasis on input rather than assessment, and acquisition rather than management. Therefore, the establishment of an effective assessment mechanism is vital for promoting healthy and stable development in fixed assets management within universities.

In summary, the performance management mechanism of fixed assets in universities plays a crucial role in objectively assessing the efficiency of fixed asset management and utilization. It enables relevant personnel to promptly adjust management practices and directions based on performance feedback.

3.3 Approaches to perform of fixed assets management

1) Improve the system of fixed assets management

Liang, Y. (2018) emphasized the significance and urgency of establishing a fixed asset management system in universities in response to new circumstances. Strengthening the construction of such a system is essential for maximizing the utilization of fixed assets, enhancing employees' work enthusiasm and innovation, and unifying the values of management personnel.

Chen, X. (2023) highlighted that the successful establishment of a fixed asset management system in universities relies on the ideological attention and practical implementation by university leadership.

In summary, universities have institutionalized specific tasks, responsibilities, authorities, and methods for fixed asset management to impose stricter controls on the allocation, purchase, registration, use, and disposal of fixed assets. This ensures that the fixed asset management system consistently supports the administration, scientific research, teaching, and logistics functions of universities.

2) Strengthen the construction of management team

According to Xiao, L. (2015), as the scale of universities and the importance of fixed assets management increase, fixed assets management has evolved into a professional, institutionalized, and standardized task. Therefore, establishing a sound asset management team, clarifying tasks and responsibilities, and prioritizing the selection of professionals with expertise in accounting, statistics, computer science, and practical experience are necessary. By assembling a competent and cohesive team, universities can create conditions for the overall improvement of fixed assets management.

Liu and Fang (2021) emphasize the significance of a stable management team for ensuring the systemic continuity and improvement of fixed assets management in universities. Universities should allocate full-time and part-time asset management personnel reasonably based on the characteristics of their fixed assets management work. Asset management personnel in universities should primarily consist of full-time and part-time staff, with a combination of both types to be implemented. Full-time managers should lead asset management departments, and other departments should have an appropriate number of part-time asset managers based on the number of assets and asset management workload. Each department should designate its staff as part-time asset management personnel, and changes to part-time asset management personnel should require prior approval and reassignment to maintain stability within the asset management team.

Chen, Q. (2014) describes how universities should organize and plan regular and irregular training sessions for asset managers, institutionalizing, normalizing, and systematizing the training process. Through training, management personnel can acquire the essential skills, knowledge, and methods necessary for their work and integrate them into their practices. Simultaneously, training enhances the sense of mission, honor, and responsibility among management personnel, fostering a heightened service mindset and correcting work attitudes. Training formats may include reports, lectures, knowledge-sharing sessions, seminars, etc. Moreover, managers are encouraged to pursue external study opportunities at other universities and establish asset management personnel exchange groups using networking platforms.

In summary, universities must prioritize the professional development of their fixed assets management personnel teams, ensuring they possess strong business acumen, high technical proficiency, and a high level of professionalism.

3) Intelligent management model

Li, L. (2021) pointed out that in the actual process, staff should fully utilize information technology, integrating it into various aspects of fixed asset management to enhance the overall level of management, thus showcasing the benefits of intelligent fixed asset management in universities.

According to Zhang, W. Y. (2020), universities should increase financial investment in asset management and introduce advanced information technology management equipment and software systems. Simultaneously, the system mode should be regularly optimized, incorporating various functions such as automatic data collection, classification of intangible and tangible assets, and visual data analysis of asset management status. The system should also include an

expansion mechanism and long-term goals to realize the sustainable development of intelligent fixed asset management in universities.

Shen, L. (2020) highlighted the importance of establishing a mobile application platform using cell phones to streamline fixed asset management processes. All university departments can handle asset applications according to their needs, with responsible individuals able to provide approvals via mobile devices. This approach ensures transparent, standardized, and efficient flow of fixed asset information, thereby enhancing office efficiency in asset management.

Moreover, the mobile application platform can leverage computer technology to upgrade its functions and modules. By synchronizing school fixed asset information based on management demands, the platform enables data exchange among various asset management departments. This ensures timely information sharing and effective data exchange across the business system.

In summary, universities integrate information technology into the management process of fixed assets, implementing information construction in the procurement, use, and disposal phases of fixed assets. They establish an information management module, visualize the procurement process, and comprehensively manage fixed asset procurement applications, acceptance, daily maintenance, and waste declaration. These efforts aim to enhance the quality of fixed asset management in universities.

4) Constructing performance assessment index system

Zhang, W. (2019) pointed out that universities can use indicators such as the total amount of assets, the stock of assets, the annual growth rate of assets, and the net growth rate of assets to reflect the scale of assets. They can also utilize ratios such as financially allocated assets versus own-funded assets, administrative office assets versus research-funded assets to reflect the scale of assets with different funding sources.

Additionally, universities can use indicators such as the ratio of intangible assets, proportion of large instruments and equipment, proportion of low-value consumables, proportion of books and archives, and rate of non-performing assets to reflect the structure level of assets. The turnover rate of fixed assets reflects the efficiency of fixed assets in universities, while year-on-year and year-on-year ratios of total fixed assets reflect the degree of change of fixed assets.

Lin, X. (2019) described how universities can use indicators such as the storage of fixed assets and the preservation rate of buildings to reflect the preservation of fixed assets. They can also utilize indicators such as the actual income created by fixed assets, the efficiency of using fixed assets, and the growth rate and iteration rate of assets to measure the use of fixed assets. Additionally, the growth rate of teaching and research reflects the strength of investment in teaching and research assets of universities each year.

Asset efficiency is mainly reflected in the various revenues brought by the use of fixed assets in universities, such as income from patent technology transfer and licensing, income obtained from asset transfer and sharing, and income from teaching and research funds obtained by relying on each asset. Indicators such as asset utilization rate, asset income generation rate, degree of integration of production, learning and research, and input-output ratio of student cultivation are used to reflect the benefits generated by state-owned assets in universities.

Feng, X. and Li, M. (2020) described how the efficiency of asset management by departments and units is reflected by the asset transfer rate, asset transfer rate, and asset sharing rate in the process of using the sharing module of the fixed assets management platform of universities. The budget allocation rate of fixed assets is used to measure the extent of the use of assets to the budget.

In summary, establishing a comprehensive performance appraisal index system for fixed assets management at universities serves multiple purposes.

Firstly, it provides the government with a basis for analyzing the educational resources of universities, aiding in making informed decisions regarding investment allocation. Secondly, it enables other investment entities to determine investment directions and levels based on the assessment standards of fixed assets management at universities. This systematic approach ensures transparency, accountability, and efficiency in resource allocation within the education sector.

4.Approaches for Fixed Assets Management

4.1 Status of the approaches for fixed assets management

To standardize and optimize the management of fixed assets in higher education institutions, the "Interim Approach for the Management of Fixed Assets in Institutions" (Ministry of Finance, 2019) has been established. The purpose of this approach is to safeguard the safety and integrity of state-owned assets, to allocate and utilize fixed assets in a rational and effective manner, to ensure and promote the development of various initiatives, and to establish a state-owned asset management system for institutions that meets the socialist market economy and public finance requirements.

The "Regulations on the Implementation of the Government Procurement Law of the People's Republic of China" (State Council, 2015) set forth specific requirements for the procurement of fixed assets by higher education institutions. This approach mandates a transparent and fair procurement process, emphasizing the need for competitive bidding to ensure that the procurement of fixed assets is conducted economically and efficiently, in line with principles of fairness, openness, and value for money. Furthermore, it requires that such procurements adhere strictly to budgetary constraints and procurement plans, aiming to optimize

resource allocation and promote the effective use of state-owned assets within the framework of public finance and market economy regulations.

The "Supplementary Regulations on the Disposal Management of State-owned Assets of Universities Directly Under Central Departments" (Ministry of Finance, 2017) specifies requirements for the disposal of fixed assets in universities. This approach aims to enhance the transparency, efficiency, and effectiveness of the disposal process, ensuring that assets are disposed of in a manner that maximizes their value and supports the sustainable development of educational institutions. It emphasizes the importance of adhering to principles of fairness, openness, and competition, and requires that the disposal of state-owned assets be conducted in accordance with relevant laws and regulations to prevent the loss of state-owned assets and promote their rational and efficient utilization.

The directives "Encouraging the Transfer and Sharing of Fixed Assets among Administrative and Public Institutions" (Ministry of Finance, 2017) and "Notice on Further Strengthening the Management of State-owned Asset Leasing and Lending" (Ministry of Education, 2020) set forth specific requirements for the use of fixed assets in universities. These documents aim to foster a culture of efficiency, sharing, and optimization in asset management within the higher education sector. By promoting the transfer and sharing of fixed assets, and by regulating leasing and lending practices, these approaches seek to ensure that state-owned assets are utilized to their fullest potential, thereby supporting the mission of educational institutions to deliver quality education and research while also safeguarding and enhancing the value of state-owned assets. This approach not only contributes to the sustainable development of universities but also aligns with broader governmental objectives of asset management efficiency and public resource optimization.

The "Interim Measures for the Inventory of Fixed Assets in Central Administrative Institutions" (State Council, 2020) set forth specific requirements for

the inventory and registration of fixed assets in universities. This directive emphasizes the need for a comprehensive, accurate, and systematic inventory of fixed assets to ensure the integrity and accuracy of asset management. It mandates that universities regularly conduct audits and updates of their asset registers, identifying any discrepancies, losses, or inefficiencies in asset management. The goal is to improve the accountability and transparency of fixed asset management, thereby enhancing financial integrity and supporting the optimal use of resources in the higher education sector. This initiative also serves to reinforce the administrative and financial governance of universities, aligning with broader efforts to promote fiscal discipline and efficiency within public institutions.

In summary, the established approaches for managing fixed assets at universities emphasize standardization, transparency, and efficiency. These approaches aim to ensure the rational use of fixed assets, align with fiscal discipline, and support sustainable development within the university sector.

4.2 Processes of the approach development

According to Education, A. (2009), the process for developing Approaches includes defining the purpose, clarifying the scope, conducting a literature review, identifying key points, drafting an initial outline, inviting expert reviews, revising and refining, conducting a final review, and ultimately publishing and promoting. These steps aim to ensure the accuracy, comprehensiveness, and practicality of the approaches to facilitate effective management practices and institutional development within universities.

Lee, N., Dossick, C. S., and Foley, S. P. (2013) outline the process of developing Approaches as follows: initially, it is critical to clearly define the purpose and objectives, as this aids in identifying the problems to be addressed and the goals to be achieved. It is important to then delineate the scope of the Approaches to ensure

comprehensive coverage of relevant topics and areas. The next step involves conducting a literature review, where relevant research findings and best practices are collected to provide theoretical support and practical references for the Approaches. After gathering sufficient information, the key points are determined, and an initial outline is developed. Experts are subsequently invited to review this draft, and their feedback is used to refine and enhance the Approaches. Finally, a thorough review is conducted to ensure the accuracy and practicality of the Approaches before they are published and promoted to relevant stakeholders.

"The Interim Measures for the Management of Fixed Assets of Public Institutions" (Ministry of Finance, 2019) apply to the activities of managing fixed assets in public institutions at all levels. To develop approaches for fixed assets management in universities, we must first determine the objectives and scope of application of the approaches, and collect and analyze information related to fixed assets management. Then, we establish the framework and clarify the responsible personnel and processes for each link. Next, the specific contents of the approaches are developed, focusing on detailed specifications and practical, easy-to-use operations. Finally, the approaches are published and promoted internally and externally, and are regularly reviewed and updated to ensure their applicability to the university's fixed assets management.

In summary, the researcher concludes that there are 5 steps in the process for developing Approaches: 1) Preparation, 2) Investigation and analysis, 3) Design, 4) Dissemination, 5) Evaluation.

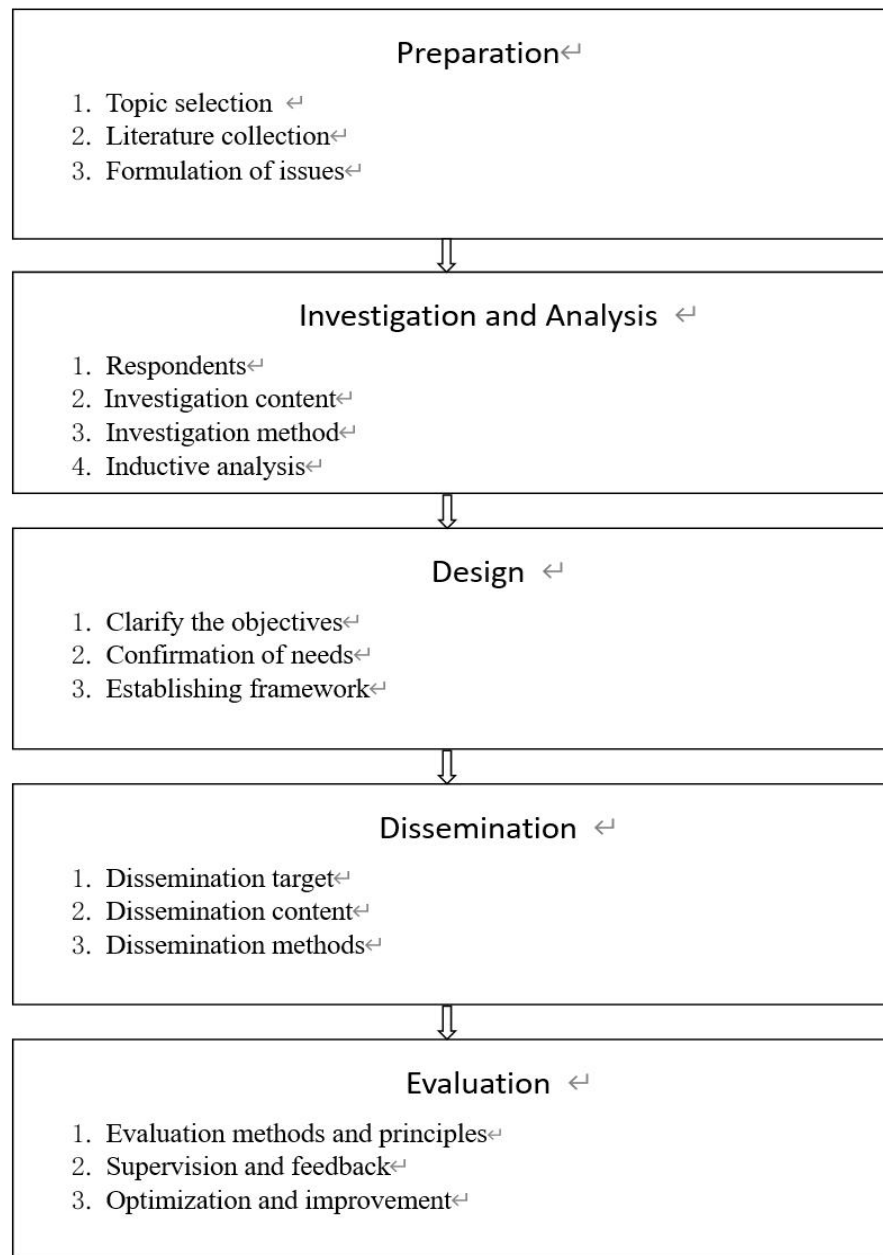


Figure 5 Processes of the Approach Development

4.2.1 Preparation

Wang, S.P. (2015) mentioned that the preparation for developing approaches requires referencing a wide range of literature to ensure that the approaches are based on sound data and best practices.

According to Nian-Hua, F. (2006), the preparation phase for developing approaches includes the following components.

(1) Topic selection: It is an important part of the approach development process. The selection of a topic requires steps such as defining the objectives and audience of the approaches, determining the topic and scope, assessing the quality of the evidence, and developing recommendations and guidance for the approaches. The correct selection of a topic ensures that the approaches have practical application.

(2) Literature collection: Researchers at Colorado State University in the United States have studied the optimization of fixed assets management processes in universities, which included collecting literature as one of the important sources of information. According to Xie, S. (2021), learning from the fixed assets management practices in other universities or industries holds significant reference value for developing a management process that is suitable for their own universities.

When developing approaches, collecting literature is a very important step. By extensively collecting and carefully organizing literature, it can make full use of existing resources, avoid duplication of work, and provide sufficient theoretical and practical support for the development of the approaches, thus making them more scientific and reasonable. To effectively determine the scope of literature collection, it is necessary to consider the research field, research objectives, and research questions, and to find the most suitable literature sources. Therefore, the following scope of literature collection was determined in the development of the approaches for fixed assets management of universities in Jiangxi Province:

-Regulations and policy documents related to fixed assets management in universities, such as financial accounting laws, enterprise accounting standards, etc.

-Relevant standards and norms: such as norms of fixed assets management, norms of fixed assets evaluation, norms of fixed assets inventory, etc.

-Other cases of fixed assets management in universities and papers and journals of related research, etc.

(3) Formulation of issues: It is very important to choose suitable issues in the process of developing the approaches, because it will affect the quality and practicality of the final approaches. The methods of developing questions include considering existing evidence and expert opinions, collecting relevant data, and consulting with stakeholders.

4.2.2 Investigation and analysis

Analyzing survey respondents before developing approaches for fixed assets management in universities can help clarify needs, locate objectives, improve feasibility, facilitate communication, and enhance quality. This ensures the approaches are more scientific, standardized, and practical, ultimately improving the quality and level of fixed assets management.

(1) Respondents

According to the study by Wang, L. (2013), it is necessary to clarify the target groups and management objects in the process of developing approaches for fixed assets management in universities. These include operational and management departments for fixed assets, user departments, and maintenance departments, with specific management measures provided for these target groups. The investigation targets for developing the implementation approach of fixed assets management at universities in Jiangxi Province are as follows:

- Asset management department of universities: the main responsible department for the management of fixed assets at universities, responsible for planning, organizing, coordinating, and supervising the procurement, use, and disposal of fixed assets.

- Faculties/departments and related teachers and staff in universities: they are the actual users of fixed assets and have a more direct understanding and experience of the usage of fixed assets, and can provide valuable opinions and suggestions.

- Financial departments of universities: they are key departments in the management of fixed assets at universities, responsible for accounting and managing the funds and accounts of fixed assets, and can provide professional knowledge and experience in financial management.

- Relevant experts and scholars: they are professionals in the field of fixed assets management, with rich theoretical knowledge and practical experience, and can provide cutting-edge ideas and methods.

(2) Investigation content

Liu et al. (2018) demonstrated that when determining the survey content for the approaches to fixed assets management at universities, it's crucial to focus on the type, quantity, usage, and maintenance of fixed assets, and to achieve effective collection and analysis of these data through information technology. According to Liu et al. (2018), the survey contents for the implementation approach of fixed assets management are formulated as follows:

- Fixed assets procurement: Investigate the current methods and procedures of fixed assets procurement at universities, the process of making and approving procurement budgets, and the different requirements for the procurement of fixed assets of various types and values.

- Use and maintenance of fixed assets: Investigate the norms of use and safety protection measures for fixed assets at universities, as well as the process and standards of repair and maintenance, including specific requirements for testing, maintenance, repair, and renewal of equipment.

- Disposal of fixed assets: Investigate the procedures and standards for the disposal of fixed assets at universities, including specific steps and requirements for scrapping, selling, giving away, and transferring, as well as the organization and implementation of asset cleaning work.

- Financial management of fixed assets: Investigate the specific requirements of financial management for fixed assets at universities, including operational steps and standards in the use of funds, accounting, depreciation calculation, asset inventory, etc.

- Informationized management of fixed assets: Investigate the current situation and needs for informationized management of fixed assets at universities, including specific conditions and requirements for data management, information system construction, and intelligent equipment application, etc.

- Evaluation of fixed assets management: Investigate the evaluation standards and methods for fixed assets management at universities, including specific processes and contents of internal and external evaluations.

- Laws, regulations, and policy documents related to fixed assets management: Investigate the laws, regulations, and policy documents related to fixed assets management at universities, such as the Measures for the Management of Fixed Assets in Universities and the Notice of the National Development and Reform Commission of the Ministry of Finance on Strengthening the Management of Fixed Assets, etc.

- Case analysis of fixed assets management: Investigate the successful cases and experiences of fixed assets management at universities both domestically and internationally.

(3) Investigation method

Lin, J. (2021) emphasized the importance of fully considering the advantages and disadvantages of different survey methods and their scope of

application, choosing the appropriate survey methods based on specific situations. It is also crucial to ensure the accuracy and reliability of data in the survey process to guarantee that the collected data are true, complete, and accurate.

Li, Q. (2020) proposed specific methods to determine the survey methods in the approach for fixed assets management at universities:

- Questionnaire survey: By designing questionnaires and conducting targeted surveys for different respondents, a large amount of quantitative data and feedback can be obtained.
- In-depth interview: Select some representative respondents and conduct in-depth interviews to obtain more detailed information and real opinions.
- On-site observation: Directly enter the site of fixed assets management at Jiangxi universities to understand its operation process, standardization criteria, and problems through observation and experience.
- Literature analysis: Through consulting literature, understand the relevant laws, regulations, policy documents, and successful cases of fixed assets management at universities both domestically and internationally, to provide references for the formulation of the approach.
- Expert validation: Invite experts, scholars, and industry professionals in the field of fixed assets management to review and improve the content, structure, and language of the approaches.

(4) Inductive analysis

According to Ji, W. (2019), applying inductive analysis to the data collection and analysis process can more effectively identify bottlenecks and difficulties in asset management, pinpoint where problems lie, and propose solutions to achieve efficient and accurate asset management.

According to Fu, R., & Hu, Z.H. (2022), it's important to clarify the target group and the content of needs when developing the approach for fixed assets management at universities in Jiangxi Province.

-Administrative departments of universities: They need a detailed approach for fixed asset management, including specific requirements and operational steps for the procurement process, usage regulations, and disposal procedures of fixed assets.

-Faculties/departments and related teachers and staff: They need a concise and easy-to-understand approach with content that is targeted and can solve practical problems, while also considering the differences among various disciplines, majors, and functional departments.

-Finance departments: They need an approach covering financial management, which should introduce specific operational steps such as accounting, reporting, and auditing of fixed assets funds, and also provide clear requirements and standards for accounting for depreciation and profit distribution of fixed assets.

-Relevant experts and scholars: They need a cutting-edge and theoretical approach that introduces the latest fixed assets management concepts, methods, and tools, and also provides some cases and suggestions so that universities can better navigate future challenges and opportunities.

4.2.3 Design

According to Chu, X., & Liu, N. (2022), several aspects of the design process of the approach for fixed assets management at universities need to be considered, including: clarifying the objectives and scope, designing the organizational structure, identifying the main content points, establishing rules and regulations, supporting construction with information systems, training and publicity, and conducting audits and evaluations.

(1) Clarify the objectives

When formulating the approaches for fixed assets management in universities, it is essential to clarify the management objectives, taking them as the guiding ideology and work focus, and develop corresponding management strategies and work plans for different types of fixed assets. Attention should be paid to the scientific and practical nature of setting objectives to ensure that they can effectively promote the standardization, scientific approach, and informatization of fixed assets management in universities.

According to Chen, X. (2022), the objectives should be clarified when designing the approaches as follows:

- To standardize the processes and procedures of fixed assets management to ensure the standardization, scientific approach, and effectiveness of asset management.
- To clarify the responsible entities and their responsibilities in fixed assets management, establish a perfect management system, and improve the management level and efficiency.
- Establish a sound information management system for fixed assets to realize the information management and tracking of fixed assets.
- To improve the transparency and openness of fixed assets management and prevent asset loss and waste.
- Promote the rational allocation and optimal use of fixed assets, and reduce management costs and operational risks.
- Strengthen personnel training and publicity to improve the awareness and ability of managers and users in fixed assets management.
- Regularly audit and evaluate the management of fixed assets and correct any problems in time to continuously improve the management.

(2) Confirmation of needs

According to Cui, L. (2019), in the process of developing the approaches, it is also necessary to consider the needs and concerns of people with different requirements and provide corresponding solutions and support measures in a targeted manner to ensure that the approaches developed are operational and feasible.

According to Gao, H. (2022), the needs of fixed assets management in universities include the following contents:

- The basic principles, processes, and procedures of fixed assets management, including equipment acquisition, acceptance, registration, and disposal, need to be introduced in detail to standardize the workflow of fixed assets management.
- It is necessary to clarify the responsible entities and their responsibilities in fixed assets management, establish a perfect management system, and ensure that the management responsibilities of each link are in place.
- It is necessary to establish a sound asset information management system to realize the information management and tracking of fixed assets and improve management efficiency and data accuracy.
- Internal management rules and regulations need to be formulated with reference to relevant national laws, regulations, and policies to ensure comprehensive, standardized, and scientific management of fixed assets.
- Management training and propaganda need to be carried out for different personnel to improve their awareness and ability in fixed assets management.
- Regular audit and evaluation mechanisms need to be established to detect problems and correct them in time to promote continuous improvement of fixed assets management.

(3) Establishing framework

According to He, X. W. (2022), the corresponding management framework for fixed assets management in universities is established based on the actual situation and needs, including policy, regulation, system construction, information management, and life cycle management. Specific work content and focus are determined for each aspect. Specifically, it comprises the following parts:

- Introduction: Introduce the purpose and significance of the fixed assets management approach, as well as the scope of application and targets.
- Basic principles of fixed assets management: Detail the basic principles that should be followed in fixed assets management, such as scientific approach, standardization, and fairness.
- Processes and procedures of fixed assets management: Include detailed processes and procedures for equipment acquisition, acceptance, registration, disposal, etc., to ensure that the management responsibilities of each link are in place.
- Responsibilities of fixed assets management personnel: Clarify the responsibilities and authority of personnel related to fixed assets management, establish a perfect management system, and ensure that management responsibilities are put in place.
- Asset information management system: Establish a sound asset information management system to realize information management and tracking of fixed assets and improve management efficiency and data accuracy.
- Rules and regulations: Formulate management rules and regulations with reference to relevant national laws, regulations, and policies to ensure comprehensive, standardized, and scientific management of fixed assets.
- Training and propaganda: Conduct management training and propaganda for different personnel to improve their awareness and ability in fixed assets management.

- Audit and evaluation: Establish a regular audit and evaluation mechanism to identify problems and correct them in time to promote the continuous improvement of fixed assets management.

4.2.4 Dissemination

Li, M., Zhang, S., & Wu, Y. (2018) mentioned the dissemination of the approaches can make all relevant personnel understand the basic principles, processes, and procedures, as well as the division of responsibilities and management requirements, which can standardize the management workflow and improve management efficiency and data accuracy. Through internal training and dissemination, it can help managers and users better understand and apply the approaches, thus improving the management level and capability of the entire fixed assets management organization.

(1) Dissemination target

Pan, X. (2016) showed that the dissemination targets of the fixed assets management approach for universities mainly include education administration departments, finance departments, logistics management departments, and using units, analyzing the needs and concerns of different targets. Therefore, the dissemination targets of the fixed assets management implementation approach of the universities in Jiangxi Province should include:

- Internal management personnel of universities: including staff of the fixed assets management department, financial personnel, procurement personnel, etc. They need to master the basic processes and procedures of fixed assets management to ensure the standardization of fixed assets management.

- Teaching and research personnel: They need to understand the relevant policies, regulations, and system requirements of fixed assets management to reasonably allocate and utilize fixed assets and promote the development of academic and research undertakings.

- Student users: They need to know how to use and protect fixed assets properly to avoid unnecessary waste and damage.

- Enterprise organizations and the public: For enterprises and the public who are involved in external financing, investment, and purchasing university equipment, they need to understand the relevant policies and requirements of fixed assets management of universities to better carry out cooperation and communication.

(2) Dissemination content

Yang, G. (2022) described that the dissemination content includes basic principles, management processes, information management, data statistics, and information systems, among others. Additionally, it is crucial to focus on the operability and feasibility of the content when formulating the dissemination content to ensure that the approaches can be widely accepted and implemented. The following contents are specifically included:

- The purpose and meaning of the approach: Introduce the purpose and meaning of the approach, so that the target audience can understand why such an approach is needed and what benefits it can bring.

- The scope and target of the approach: Clarify the scope and target of the approach's application, informing the target audience about the guiding role of the approach and for which personnel it is intended.

- The basic principles and processes of the approaches: Introduce the basic principles and processes of fixed assets management in detail, so that the target audience can understand how to implement management requirements at each link and how to standardize the fixed assets management process.

- Specific requirements and application methods of the approaches: Clarify the specific requirements and application methods of the

approaches, informing the target audience about the operational methods and precautions in the practical application of the approaches.

- Internal dissemination and promotion methods of the approaches: Introduce the ways and methods adopted for internal dissemination and promotion of the approaches, so that the target audience will know how to better promote the approaches to increase their visibility and practical application effects.

- External dissemination and communication of the approach: Introduce the ways and means of external dissemination and communication of the approach, so that the target audience can understand how to promote and communicate the approach to other universities and enterprises.

- Follow-up evaluation and update of the approaches: Emphasize the importance of follow-up evaluation and update of the approaches to ensure they can be continuously improved and optimized with the development of management.

(3) Dissemination methods

According to Yu, Q., & Wu, X. (2022), tailored dissemination strategies and methods should be developed based on the needs and concerns of different dissemination targets. Strengthening communication and cooperation in the implementation process ensures that the approaches can be effectively disseminated and implemented.

- Internal publicity and promotion: The content and application methods of the approaches can be introduced to relevant personnel through internal meetings, notices, and emails, enabling them to understand the importance and practical application effects of the approaches.

- Training lectures: Special training and lecture activities can be organized, inviting professionals or industry leaders to provide insights to help managers and users better understand and apply the approaches.

-Use of network media platforms: University's internal website, forums, and other platforms can be utilized to publish information and content of the approaches, making it accessible to a broader audience.

-External communication and cooperation: The content and advantages of the approaches can be shared with other universities through participation in conferences and forums inside and outside the industry, thereby expanding the influence and popularity of the approaches.

4.2.5 Evaluation

Zhang, X., & Wang, C. (2021) described that through the evaluation of the developed approaches, we can understand the effect and influence of the approaches in practical application, test whether the approaches achieve the expected goals and requirements, and also identify problems and shortcomings in a timely manner, proposing improvement measures to continuously enhance and optimize the contents and application methods of the approaches.

(1) Evaluation methods and principles

According to the viewpoint elaborated by Li, Y. J. (2021), the methods of approach evaluation include process evaluation, result evaluation, and benefit evaluation, among others. There are three principles for evaluating fixed assets management approaches in higher education: sustainability, safety, and convenience. Sustainability mainly pertains to whether the evaluation results exhibit long-term stability and continuance; safety primarily concerns the impact of evaluation on the security and confidentiality of fixed assets; convenience relates to whether the evaluation results are easy for university management and staff to use and understand.

(2) Supervision and feedback

Supervision and feedback involve setting up a robust supervision mechanism and feedback mechanism after the development and implementation of management approaches to monitor, evaluate, and track the quality

and effectiveness of the approaches and provide timely feedback on the results. This process ensures that the approaches can be continuously refined and perfected.

According to Chen, S. (2019), in practice, it is necessary to select and apply suitable monitoring and feedback methods and measures based on specific situations to continuously improve and enhance the efficiency and effectiveness of the monitoring and feedback mechanisms.

- Usage survey: Conduct surveys through questionnaires to managers and users, among others, to understand the actual use and effect of the approaches, and provide timely feedback, adjustments, and improvements.

- Monitoring and evaluation mechanism: Establish a set of monitoring and evaluation mechanisms to monitor and evaluate the management of fixed assets, ensuring the effectiveness and usefulness of the approaches. For example, management data from each department can be collected regularly, summarized, and analyzed, and then feedback is provided to the management

- Regular inspection and verification: Regular inspections and verifications of fixed assets management should be conducted to understand the operation and existing problems of the management work, ensuring the correct implementation of the approaches. Special management personnel can be arranged to verify and inspect the fixed assets management of each college and department, allowing for timely identification and correction of irregularities.

- Establish a file on the use of approaches: Create a record of the usage of approaches, including information on issuance and updates, the units and individuals using them, and regularly conduct statistics and analysis of this record to understand the use and impact of the approaches.

(3) Optimization and improvement

Optimization and improvement aim to enhance the quality and effectiveness of management approaches, requiring a series of methods and measures

to continuously improve and enhance the efficiency and effectiveness of management approaches. According to Chen, L. (2021), the optimization and improvement methods of approaches are as follows:

- Problem diagnosis and analysis: Diagnose and analyze the problems in the implementation of fixed assets management to determine the causes and effects of the problems.
- Process reconstruction and optimization: Redesign and optimize management processes to eliminate redundant links and inefficient operations, thereby improving management efficiency and effectiveness.
- Training and feedback mechanism: Through training and feedback to managers and staff, improve their professional quality and working ability, and promote the implementation of management approaches.
- Continuous improvement and monitoring: Establish a continuous improvement and monitoring mechanism to monitor and evaluate the implementation and effectiveness of the management approaches, and continuously optimize and improve the management approaches based on the feedback results.

5. 5. The Modified Priority Need Index

5.1 Definition of the Modified Priority Need Index

Harriman, C. T. (1981) described the Modified Priority Need Index in a university context is a strategic tool tailored to prioritize the institution's needs based on a composite evaluation of several dimensions. It modifies the traditional PNI by incorporating university-specific factors such as academic performance metrics, research output, infrastructure adequacy, and student welfare indicators. This tailored approach ensures that the index reflects the unique environment of higher education,

allowing for a more nuanced and effective allocation of resources and attention to areas of most significant need.

Glass, M. P. (2000) defined the PNI within a university is designed to methodically identify and prioritize areas requiring immediate attention or investment. This modified index is not just about numerical data; it includes qualitative assessments that encompass student and faculty feedback, relevance to educational goals, and alignment with the university's long-term strategic plan. By doing so, it provides a more holistic view of the university's priorities, acknowledging that the most pressing needs may not always be the most obvious ones.

Meichtry, Yvonne, Harrell, & Lorna. (2002) explained the PNI at a university serves as a dynamic framework that adapts to the evolving landscape of higher education. It's a refined instrument that assesses priority needs by incorporating emerging trends in education technology, diversity and inclusion, and global engagement. The modification in this index is the result of an iterative process that considers the shifting priorities in academia, ensuring that resource allocation supports the most current and pressing demands of the university community.

In Summary, the Modified Priority Need Index can be summarized as a comprehensive tool that integrates quantitative and qualitative data to evaluate and rank the needs within an academic institution. It extends beyond the conventional Priority Need Index by factoring in unique university-specific elements such as academic achievements, research contributions, infrastructure requirements, student services, and societal trends.

5.2 Steps in priority needs assessment

Brittingham, B. E.& Netusil, A. J. (1976) explained that conducting a priority needs assessment within a university begins with a preparatory phase where we define the scope and objectives of the assessment. We then move on to gather

relevant data through surveys, interviews, and reviewing existing documentation. This data is critical for understanding the current state of the university's assets and infrastructure. After data collection, we perform a detailed analysis to identify gaps in resources versus strategic goals. Subsequently, we prioritize needs based on a set of criteria that may include the urgency of need, impact on the university's core mission, and available budget. The final step involves synthesizing the findings into a report that proposes actionable recommendations and outlines a strategic plan for addressing the identified needs.

Manns, D. & Opp, R. (2001) defined the process of priority needs assessment at a university is a structured approach that ensures the optimal allocation of resources. Initially, it requires the establishment of a multidisciplinary team to lead the assessment. The team's first task is to understand the university's strategic plan to align the assessment with long-term objectives. Following this, there is a rigorous data collection process that involves both qualitative and quantitative methods. Once data is collected, the team undertakes a critical needs analysis, often employing a modified priority need index (MPNI) to weigh different areas against one another. The culmination of this process is the development of a prioritized list of needs, which is then translated into a comprehensive action plan with timelines and responsibilities.

Singletary, L. & Powell, P. (2022) described a priority needs assessment in a university involves a sequence of methodical steps that range from initial assessment to final recommendation. The first step is a clear articulation of what constitutes 'need' within the context of the university's mission and values. This is followed by an empirical assessment phase, where data is meticulously collected regarding current usage patterns, maintenance costs, and user satisfaction. Analysis of this data then enables the identification of needs. Ranking these needs requires a balanced consideration of factors such as strategic importance, cost-benefit analysis, and the potential for enhancing student and faculty experience. The assessment

concludes with the development of a strategic plan that aligns the university's vision with the practical steps needed to fulfill the prioritized needs.

In Summary, the priority needs assessment unfolds through several concise steps: 1) Define Objectives; 2) Collect Data; 3) Analyze Data; 4) Prioritize Needs; 5) Plan Implementation.

6. Related Research

6.1 Domestic research

According to Liu, W., Yang, M., & Liu, H. (2013), the approaches for fixed assets management in universities are developed to standardize management behavior and improve management level and efficiency. The contents and steps of these approaches include objectives and principles, processes and procedures, responsibilities and rights, monitoring and evaluation, as well as training and publicity.

According to Chen, Q. (2014), the performance evaluation model for the approaches to fixed assets management in universities is clarified, with specific contents and steps introduced, including objectives and indicators, data collection and processing, performance evaluation model, and the performance evaluation report.

6.2 Foreign research

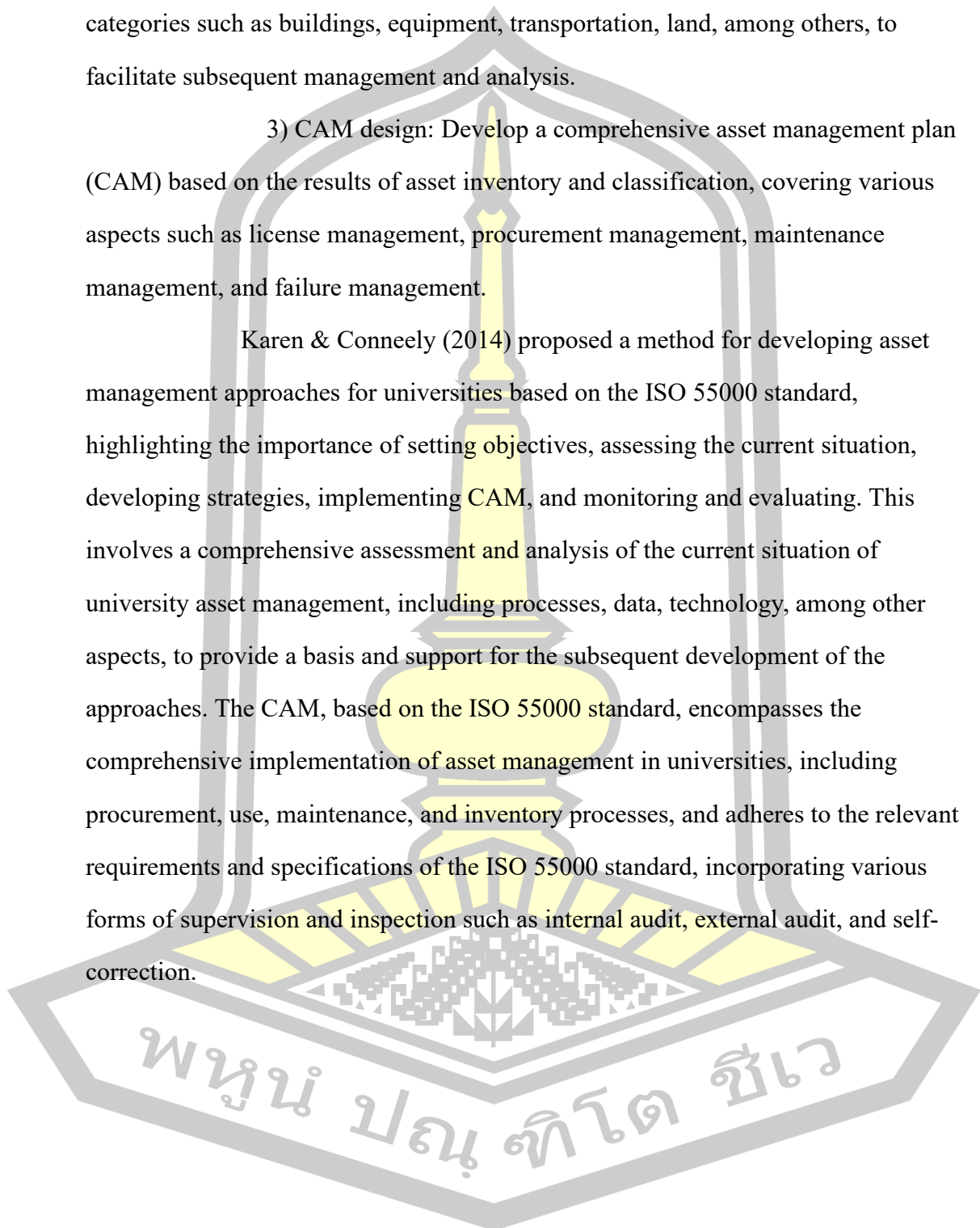
Venkatraman & Sitalakshmi (2007) proposed a method for developing asset management approaches for universities based on a comprehensive asset management plan (CAM), detailing specific implementation steps and their effects. These steps include:

- 1) Asset inventory: Conduct a comprehensive inventory and data collection of fixed assets in universities, including gathering and organizing information on asset ledgers, technical parameters, and maintenance records.

2) Asset classification: Classify and file the inventoried assets into categories such as buildings, equipment, transportation, land, among others, to facilitate subsequent management and analysis.

3) CAM design: Develop a comprehensive asset management plan (CAM) based on the results of asset inventory and classification, covering various aspects such as license management, procurement management, maintenance management, and failure management.

Karen & Conneely (2014) proposed a method for developing asset management approaches for universities based on the ISO 55000 standard, highlighting the importance of setting objectives, assessing the current situation, developing strategies, implementing CAM, and monitoring and evaluating. This involves a comprehensive assessment and analysis of the current situation of university asset management, including processes, data, technology, among other aspects, to provide a basis and support for the subsequent development of the approaches. The CAM, based on the ISO 55000 standard, encompasses the comprehensive implementation of asset management in universities, including procurement, use, maintenance, and inventory processes, and adheres to the relevant requirements and specifications of the ISO 55000 standard, incorporating various forms of supervision and inspection such as internal audit, external audit, and self-correction.



CHAPTER III

RESEARCH METHODOLOGY

Research methods comprise a series of standardized procedures employed in academic research. These include determining research problems and objectives, collecting literature data, developing research plans, collecting and processing data, displaying and analyzing results, and writing papers. These steps must be systematically performed to ensure the research results are scientific and reliable. The specific research process should be tailored to the individual research topics and problems. In this study, Research and Development (R&D) methods were utilized.

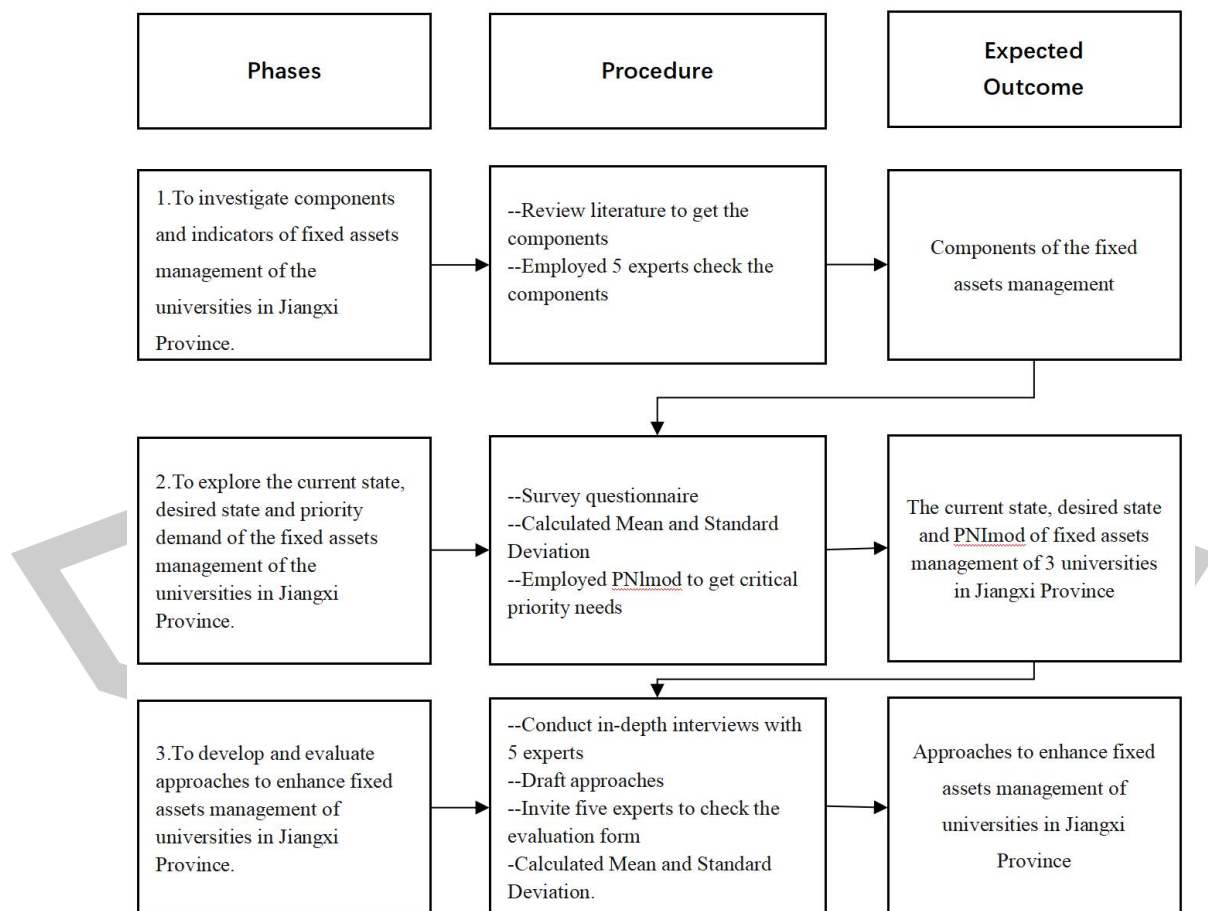


Figure 6 Processes of Research Methodology

Phase I: To Investigate Components and Indicators of Fixed Assets Management of the Universities in Jiangxi Province.

Step 1: Get the components and indicators

1.Data Sources: The foundation of the research rested on a broad spectrum of literature. The researcher delved into an array of professional books that provide theoretical frameworks and case studies pertinent to fixed assets management in higher education. Academic journals were scrutinized for up-to-date research findings and discussions that shed light on current practices and challenges in asset management within universities. This diverse collection of sources ensured a well-rounded understanding of the subject matter from multiple angles.

2.Research Instrument:

The research instrument was carefully chosen to facilitate the effective gathering of relevant data from the identified sources. A systematic review methodology was employed, allowing for a structured approach to extracting and synthesizing information from the literature. This method involved creating a set of criteria for the selection of sources to ensure the relevance and quality of the information. The review process was guided by a set of predefined questions aimed at uncovering insights related to the management of fixed assets in the context of universities, specifically focusing on practices, challenges, and outcomes.

In this section, researcher utilized a checklist to identify the 5 components of fixed assets management in universities, forming the basis for the first research objective.

3.Data Collection: The data collection phase was executed through a search and review process, adhering to the criteria established in the research instrument phase. The researcher accessed databases and libraries to retrieve the

selected books, academic journals, research reports, and academic papers. Each source was examined to extract data pertinent to the management of fixed assets in universities, with a particular focus on Jiangxi Province.

4.Data Manipulation and Analysis: Data manipulation and analysis were conducted to distill insights on the components and indicators of fixed assets management of the universities in Jiangxi Province.

Step 2: Check the components and indicators

1.Expert: The researcher invited experienced experts in related fields to examine the composition of fixed assets management. These experts at least hold the Doctoral degree and more than 5 years of working experience. Respondents included:

1) Prof. Dr. Lu Pingchang, President of Jingdezhen Ceramic University and Professor and Doctoral Supervisor at the Central Academy of Fine Arts, serves as the Director of the Chinese Artists Association. Since 1993, he has been a recipient of special government subsidies from the State Council. In 2006, he was honored by being selected for the Ministry of Education's New Century Excellent Talent Support Program.

2) Prof. Dr. Chen Meng, Head of the College of Humanities at Jingdezhen University, has dedicated his career to research in educational management. With over ten years of experience in financial management, he brings a wealth of management expertise to his role.

3) Prof. Dr. Zheng Xinfu, Vice President of Jingdezhen University, has a long-standing engagement in education management. Serving as a university leader for over a decade, he possesses extensive management experience.

4) Prof. Dr. Xia Xiaohong, Dean of the Teaching Quality Assessment and Control Office at Jingdezhen University, has a long-standing

commitment to educational management research. With over a decade of engagement in fixed assets management, she brings a wealth of management experience to her role.

5) Prof. Dr. Liu Liping, Director of Asset Management at Jingdezhen University, has dedicated many years to educational management research. With over ten years of experience in fixed assets management, Dr. Liu brings extensive management knowledge and expertise.

2. Research instrument:

In the checklist, the researchers provided an overview of the sub-items for the five components of fixed assets management in universities and utilized the Likert-type Scales method, employing a five-point rating scale, to score the indicators.

To determine the degree of matching between each indicator and its corresponding component, researchers used statistical software (SPSS for Windows). This software facilitates data management, descriptive statistics, inferential statistics, data and information visualization, and report generation. SPSS for Windows accommodates various data types and sources, offering numerous statistical methods and techniques, including analysis of variance, regression analysis, factor analysis, cluster analysis, and discriminant analysis.

Researchers invited experts to evaluate the effectiveness of the components. The effectiveness of the implementation components of fixed assets management in universities was determined.

3. Data collection:

1) After completing the construction of the checklist, researcher reviewed the components to ensure their content is clearly, accurately, and easily understood.

2) Researcher contacted experts and submit checklists to verify the accuracy and robustness of these components.

3) Researcher collected the questionnaires promptly as per the agreed schedule and adjust the questionnaire components based on expert feedback. This step ensured the quality of the fixed assets management implementation components in universities.

4.Data manipulation and analysis:

The Likert-type Scales, featuring a five-point rating scale, is a commonly used measurement tool in questionnaires. It is usually composed of multiple declarative statements, followed by a five-point scale that allows respondents to express their attitudes or opinions towards the statement. The ratings range from 5, indicating "very suitable" to 1, signifying "very unsuitable".

The standard rating is set as follows:

- 5 refers to very suitable for the components / indicators
- 4 refers to suitable for the components / indicators
- 3 refers to undecided for the components / indicators
- 2 refers to unsuitable for the components / indicators
- 1 refers to very unsuitable for the components / indicators

Using SPSS for Windows, the average score and standard deviation of each sub-item within the component are calculated. The rank of the mean score is divided into five levels:

- 4.51-5.00 refers to very suitable for the components / indicators
- 3.51-4.50 refers to suitable for the components / indicators
- 2.51-3.50 refers to undecided for the components / indicators
- 1.51-2.50 refers to unsuitable for the components / indicators
- 1.00-1.50 refers to very unsuitable for the components /

indicators

Phase II: To Explore the Current State, Desired State and Priority Demand of the Fixed Assets Management of the Universities in Jiangxi Province

The researcher initiated their investigation by selecting research objects and samples, aiming to understand the current state and desired state of fixed assets management at 3 universities in Jiangxi Province. Following this, the construction of the questionnaire marked the next phase. Subsequently, collaboration with 5 experts to assess the questionnaire's validity according to IOC standards. The next stage of data collection focused on examining the current and anticipated conditions, alongside the PNImod, of fixed assets management at these universities. To compile comprehensive findings from this stage, the researcher analyzed the submitted responses to determine the average scores and standard deviations, maintaining the specific phrasing related to fixed assets management.

1. Population and sample

This study centers on the impact of fixed assets management implementation, encompassing both full-time staff and part-time managers involved in fixed assets management at universities. During the designated sampling period, staff engaged in fixed assets management from 3 universities in Jiangxi Province were designated as the total population, amounting to 221 individuals.

The Taro Yamane formula is a technique utilized to calculate sample sizes, facilitating the determination of the necessary number of samples to yield a reliable estimate within a specified confidence level and margin of error. In this study, the Taro Yamane formula was employed to determine a sample size of 142 individuals. The calculation formula is as follows:

$$n = \frac{N}{1 + N * (e)^2}$$

Where,

n -the sample size

N -the population size

e -the acceptable sampling error

* 95% confidence level and $p = 0.5$ are assumed

$N=221$ and $e=0.05$ are now known to insert the formula:

$$n = \frac{221}{1 + 221 * 0.05^2} = 142$$

Meanwhile, the researchers employed the stratified random sampling method to determine the sample size for this study. Stratified random sampling is a widely used method that ensures sample representativeness and manages the proportion of samples across different strata.

The stratified random sampling method initially segments the population into various strata based on specific characteristics, followed by a random selection of a certain number of samples from each stratum. The sampling ratio is determined based on the size and significance of each stratum to guarantee the representativeness of the sample, ultimately constituting the sample set. In this study, there are 2 strata: full-time staff and part-time staff. The formula is as follows:

$$n_i = \frac{N_i}{N} * n$$

Where $i = 1, 2$

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Table 9 Sample Selection for Questionnaires

Target group	Population	Sample Size
Jingdezhen University		
- Full-time staff	6	4
- Part-time staff	62	40
Jingdezhen Ceramic University		
- Full-time staff	9	6
- Part-time staff	84	54
Jiangxi Arts & Ceramics Technology Institute		
- Full-time staff	5	3
- Part-time staff	55	35
Total	221	142

2. Research instrument

This study employs 2 research methodologies: questionnaire surveys and semi-structured interviews. Researchers issued questionnaires to the presidents of 3 universities in Jiangxi Province. The questionnaire is organized into two segments: current state and desired state, aiming to capture insights into both the current state and desired state for the fixed assets management within these universities.

The questionnaire is divided into two main sections: personal information and key questions. Researchers designed the questionnaire drawing from the checklist established in the initial phase and incorporated items pertinent to fixed assets management in universities. At the conclusion of the questionnaire, respondents were invited to share their opinions. The structure of the questionnaire is as follows:

Part 1: Personal information

Part 2: Current state and desired state of the implementation of fixed assets management in universities

When conducting a questionnaire survey, researcher followed these stages:

- The researcher developed questions grounded in the literature review on fixed assets management in universities, focusing on its five components.
- The researcher segmented the questionnaire into two sections: current state and desired state.
- The researcher submitted the draft of the questionnaire to their supervisor to verify its accuracy.
- The researcher submitted the questionnaire to the experts and collect their feedback and suggestions.

The researcher chose 5 experts from 3 universities in Jiangxi Province for interviews. These experts, both researchers and managers in educational administration, each possess more than 5 years of experience in educational management and have attained at least a master's degree. These experts are:

1) Prof. Dr. Chen Yunping, President of Jingdezhen University, has successfully led the completion of three projects funded by the National Natural Science Foundation and the National Social Science Foundation. In addition, Dr. Chen has overseen more than 30 provincial social planning, education planning, humanities and social science research in universities, science and technology projects, and soft science and commissioned horizontal projects.

2) Prof. Dr. Fang Man, Vice President of Jingdezhen University, has been engaged in education management for an extended period and has served as a university leader for more than a decade. With extensive management experience, Dr. Fang has contributed significantly to the development and administration of the university.

3) Prof. Dr. Huang Zhijian, Vice President of Jingdezhen University, has been deeply involved in education management for many years and

has served as a university leader for over a decade. With substantial management experience, Dr. Huang has played a pivotal role in the administration and strategic development of the university.

4) Prof. Dr. Xiao Xu, President of Jiangxi Arts & Ceramics Technology Institute, has dedicated a significant portion of his career to education management. Serving as a university leader for over a decade, Dr. Xiao possesses extensive management experience, contributing significantly to the growth and development of the institute.

5) Prof. Dr. Lu Jinquan, Vice President of Jingdezhen Ceramic University, has a long-standing commitment to education management. With over a decade of service as a university leader, Dr. Lu brings a wealth of management experience to his role, contributing to the university's continued success and development.

Then, the experts evaluated the content of the questionnaire using the Index of Item-Objective Congruence (IOC) to confirm its content validity. The content is considered valid if the IOC values range from 0.50 to 1.00. Based on the suggestions and recommendations, the researcher revised the questionnaire. Subsequently, the revised questionnaire forms were returned to the advisor for finalization. The IOC was considered as follows:

+ 1 refers to the validity as high

0 refers to the validity as moderate

- 1 refers to the validity as low

The Cronbach's Alpha Coefficient is a measure of internal consistency widely utilized in psychology, educational research, and other social sciences. It assesses the correlation between items within a test, questionnaire, or measurement instrument, typically ranging between 0 and 1. A higher value indicates a stronger correlation among the measurement tool's items, thereby reflecting greater

internal consistency. Concurrently, it serves to evaluate the reliability of measurement tools, aiding in determining the utility of specific items for measurement and in enhancing the design and reliability of these instruments. Employing the Cronbach's Alpha Coefficient to calculate the policy implementation performance confirms that all items in the survey questionnaire are highly reliable for conducting this research.

3. Data collection

In this section, the researcher took the following stages for data collection:

- 1) Prepared a letter requesting cooperation from Mahasarakham University and submitted it through a formal procedure to obtain approval.
- 2) After securing approval, the researchers proceeded to collect data from 3 universities in Jiangxi Province. The questionnaire was distributed to 142 respondents across these universities.
- 3) The researchers conducted interviews with experts, primarily including principals, vice-principals, and directors of the Assets Division.

4. Data manipulation and analysis

The researcher employed the Likert-type Scales (fixed-point rating scale) to assess the current state and desired state of fixed assets management in 3 universities. The ratings ranged from 5 = “very high” to 1 = “very low”, as follows:

- 5 refers to the current/desired state as very high
- 4 refers to the current/desired state as high
- 3 refers to the current/desired state as moderate
- 2 refers to the current/desired state as low
- 1 refers to the current/desired state as very low

5. Statistics for data analysis

Upon collecting the questionnaire forms, researchers compiled the respondents' answers to generate the results of the second stage. They utilized a statistical package (SPSS for Windows) to calculate the average score and standard deviation of the current state and desired state of fixed assets management components. The ranking of the mean score is categorized into five levels:

- 4.51-5.00 refers to the current/desired state as very high
- 3.51-4.50 refers to the current/desired state as high
- 2.51-3.50 refers to the current/desired state as medium
- 1.51-2.50 refers to the current/desired state as low
- 1.00-1.50 refers to the current/desired state as very low

Ultimately, the researcher derived the Modified Priority Need Index (PNI_{mod}) using the calculated average score and standard deviation. The Modified Priority Need Index (PNI_{mod}) serves to indicate the priority needs of respondents for self-evaluation. The greater the modified value of PNI, the higher the demand. The calculation method involves subtracting the actual average from the expected average, then dividing the result by the actual average. The formula is:

$$\text{Modified PNI} = \frac{I - D}{D}$$

Where, I was referred to desired state

D was referred to current state

The Modified PNI value typically ranges from 0.00 to 1.00. The average score of Modified PNI is considered a critical factor in evaluating performance. After identifying key priority needs through Modified PNI, researchers conducted interviews on fixed assets management approaches.

Phase III: To Develop and Evaluate Approaches to Enhance Fixed Assets Management of the Universities in Jiangxi Province.

Step 1: Determine best practices

1. Informant: The researcher conducted interviews with 5 informants, each holding at least a master's degree and having a minimum of 5 years of experience in fixed assets management. The respondents include:

1) Prof. Dr. Wu Bing, Director of Tendering and Procurement at Jingdezhen Ceramic University, has dedicated many years to research in educational management. With over a decade of experience in managing fixed assets, Dr. Wu possesses extensive expertise and knowledge, making significant contributions to the field and the university's asset management practices.

2) Prof. Dr. Liu Jiancheng, Director of Asset Management at Jingdezhen Ceramic University, has devoted himself to research in educational management. With a tenure of over ten years in fixed assets management, Dr. Liu has accumulated extensive expertise and management experience, greatly benefiting the university's asset management efforts.

3) Prof. Dr. Cao Wubin, Director of Asset Management at Jingdezhen University, has dedicated himself to research in educational management. Engaged in auditing work for over a decade, Dr. Cao brings a wealth of management expertise and experience to his role.

4) Prof. Dr. Li Yingxi, Director of Asset Management at Jiangxi Arts & Ceramics Technology Institute, has a long-standing commitment to educational management research. With over a decade of experience in fixed assets management, Dr. Li brings valuable expertise and a wealth of management experience to the institution.

5) Prof. Dr. Liang Bangfu, Dean of the Asset Management Office at Jiangxi Arts & Ceramics Technology Institute, has dedicated many years to educational management research. Dr. Liang's engagement in fixed assets management for over a decade has endowed him with substantial management experience, making him a pivotal figure in the strategic planning and effective handling of the institute's assets.

2.Research instrument: The researcher planned to conduct the survey using a semi-structured interview format, with the interview outline being divided into two sections:

The first section covers personal information, including the expert's position, management level, and work experience.

The second section gathers the opinions on the questions interviewed, focusing on the best practices of the interviewed experts regarding the five components of fixed assets management.

3.Data collection: The researcher submitted a request letter to the Faculty of Education at Mahasarakham University through the official process for approval. After receiving approval, the researcher submitted the cooperation request letter and interview questionnaire to the expert and scheduled an appointment for the interview. The interview was conducted at the agreed-upon time.

4.Data manipulation and analysis: Interview materials and data were collected, the information content was organized, and the researcher analyzed the data and interview content.

Step 2: Development approaches

1.Draft approaches: The researcher has compiled a set of draft approaches for fixed assets management of universities in Jiangxi Province, according to the results of expert interviews.

2.Expert: The researchers invited 5 experts to propose revision suggestions for the draft approaches on fixed assets management of universities in Jiangxi Province. These experts all hold doctoral degrees, professor titles and more than 5 years of experience in the field of education management. They are:

1) Prof. Dr. Liu Junzhuo, Director of the Information Center at Jingdezhen University, has devoted a significant portion of his career to educational management research. With over a decade of experience in information management, Dr. Liu has accumulated extensive expertise, demonstrating his capability in overseeing and advancing the university's information systems and technology infrastructure.

2) Prof. Dr. Xiang Zhongmin, Director of Equipment Management at Jiangxi Arts & Ceramics Technology Institute, has dedicated a significant part of his career to the field of educational management research. With more than a decade of experience specifically in fixed assets management, Dr. Xiang has developed a wealth of knowledge and expertise.

3) Prof. Dr. Hu Yongjun, Director of the Finance Department at Jingdezhen University, has dedicated a significant part of his career to educational management research. With over a decade of experience in financial management, Dr. Hu brings a wealth of expertise and a deep understanding of financial strategies and practices to the institution.

4) Prof. Dr. Li Yingxi, Director of Asset Management at Jiangxi Arts & Ceramics Technology Institute, has a long-standing commitment to educational management research. With over a decade of experience in fixed assets management, Dr. Li brings valuable expertise and a wealth of management experience to the institution.

5) Prof. Dr. Si Chuncan, Dean of the Academic Affairs Office at Jingdezhen University, has dedicated himself to educational management research for

a long time. With over a decade of engagement in teaching equipment management, he brings a wealth of experience and deep insights into the effective management of educational resources and facilities.

3.Data collection: In accordance with the improvement suggestions from experts, the researchers have revised the approaches for fixed assets management of universities in Jiangxi Province.

Step 3: Assessment approaches

1. Expert: The researcher selected 5 experts to assess the evaluation form, all of whom possessed over 5 years of management experience and held a master's degree.

1) Prof. Dr. Liu Junzhuo, Director of the Information Center at Jingdezhen University, has devoted a significant portion of his career to educational management research. With over a decade of experience in information management, Dr. Liu has accumulated extensive expertise, demonstrating his capability in overseeing and advancing the university's information systems and technology infrastructure.

2) Prof. Dr. Xiang Zhongmin, Director of Equipment Management at Jiangxi Arts & Ceramics Technology Institute, has dedicated a significant part of his career to the field of educational management research. With more than a decade of experience specifically in fixed assets management, Dr. Xiang has developed a wealth of knowledge and expertise.

3) Prof. Dr. Hu Yongjun, Director of the Finance Department at Jingdezhen University, has dedicated a significant part of his career to educational management research. With over a decade of experience in financial management, Dr. Hu brings a wealth of expertise and a deep understanding of financial strategies and practices to the institution.

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5) Prof. Dr. Si Chuncan, Dean of the Academic Affairs Office at Jingdezhen University, has dedicated himself to educational management research for a long time. With over a decade of engagement in teaching equipment management, he brings a wealth of experience and deep insights into the effective management of educational resources and facilities.

2. Research Instrument

The researcher examined the content of the five components of fixed assets management, developed the approach, and based on the insights garnered from the study, identified key evaluation points. The approach was reviewed by ultimately, the approach was submitted to experts to confirm its validity, applicability, and clarity.

3. Data Collection

After completing the evaluation form, the researchers dispatched it to the experts alongside the approach. Following the submission of the evaluation form, the researchers' subsequent task was to follow up with each expert and retrieve the evaluation form by the scheduled date. Upon collecting the assessment form, the researcher meticulously reviewed the form to ensure all information was thoroughly completed.

4. Data Manipulation and Analysis

The researchers invited experts to check the evaluation form based on the five criteria:

5 refers to suitability and feasibility as very high

4 refers to suitability and feasibility as high

3 refers to suitability and feasibility as medium

2 refers to suitability and feasibility as low

1 refers to suitability and feasibility as very low

To achieve the outcomes of Phase 3, the researcher utilized a statistical software program known as the Statistical Package for the Social Sciences (SPSS for Windows) to calculate the mean score and standard deviation for each item on the evaluation form:

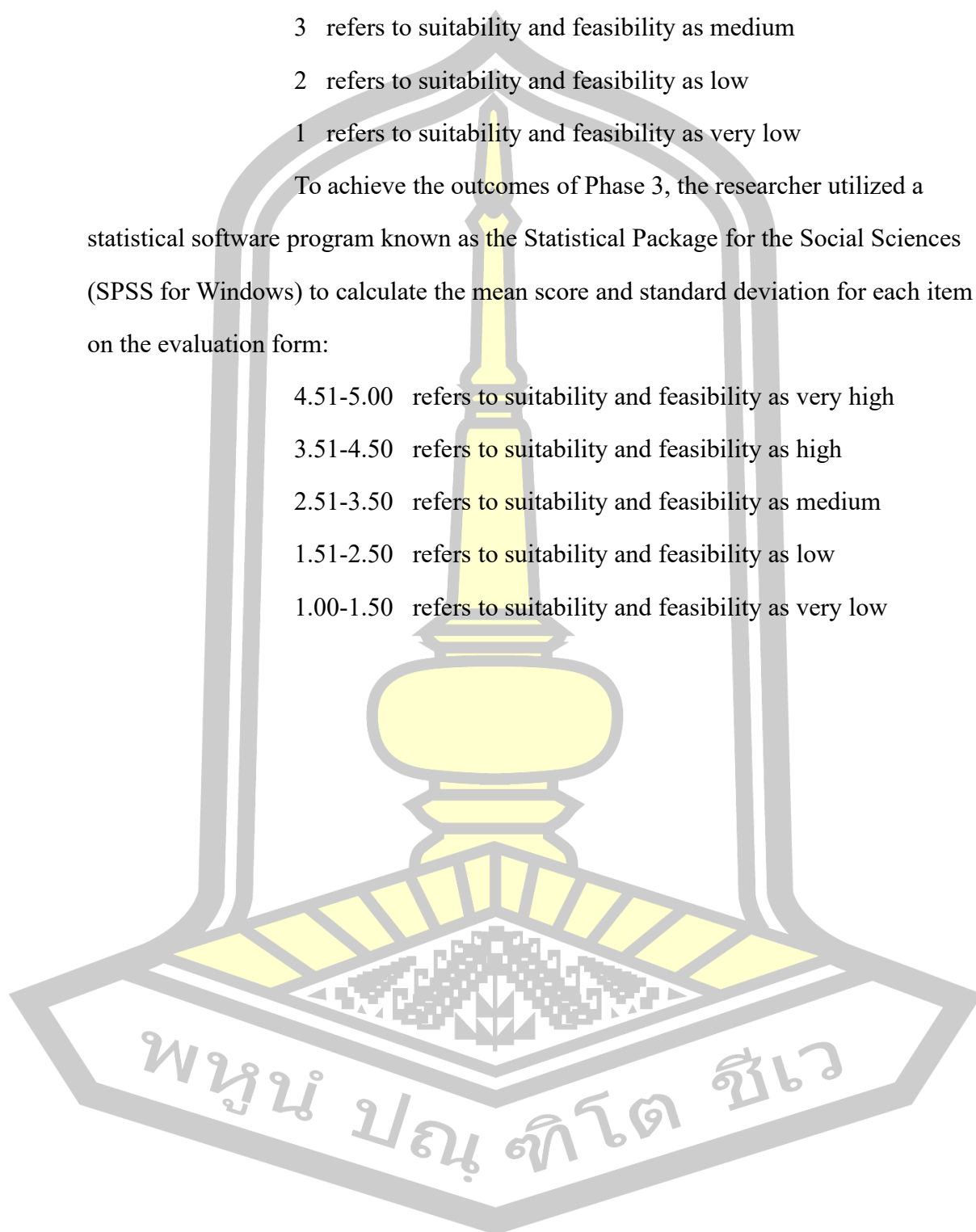
4.51-5.00 refers to suitability and feasibility as very high

3.51-4.50 refers to suitability and feasibility as high

2.51-3.50 refers to suitability and feasibility as medium

1.51-2.50 refers to suitability and feasibility as low

1.00-1.50 refers to suitability and feasibility as very low



CHAPTER IV

RESULTS OF DATA ANALYSIS

This chapter unveils the research findings and the significance of this paper. Based on the survey questionnaires completed by the presidents and vice-presidents of three universities in Jiangxi Province, it is evident that universities are actively working towards enhancing the quality of fixed assets management. This study employs a modified priority demand index to identify the principal needs of the presidents and vice-presidents. The process used in this chapter is:

1. The symbol presenting for data analysis
2. Phases of data analysis
3. Results of data analysis

The Symbol Presenting for Data Analysis

n	Numbers of sample
\bar{X}	Mean
S.D	Standard Deviation
PNI	Modified Priority Need Index
I	Desired State
D	Current State

Phases of Data Analysis

In order to get the final approach, researcher analyzed the data as:

Phase 1: Investigate components and indicators of fixed assets management of the universities in Jiangxi Province.

Phase 2: Explore the current state, desired state of the fixed assets management of the universities in Jiangxi Province.

Phase 3: Develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province.

Results of Data Analysis

Phase 1: Investigate components and indicators of fixed assets management of the universities in Jiangxi Province

In this research, a checklist of components was delivered to 5 experts for the examination of fixed assets management components, and all checklists were returned to the researcher. The aggregate results of the five components of fixed assets management are depicted below:

Table 10 Mean, Standard Deviation, and Suitability of Components

No	Components	Appropriately			Accuracy			Feasibility		
		\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1	Allocation	4.73	.279	Very Suitable	4.80	.183	Very Suitable	4.93	.149	Very Suitable
2	Purchase	4.60	.418	Very Suitable	4.70	.447	Very Suitable	4.90	.224	Very Suitable
3	Registration	4.80	.183	Very Suitable	4.80	.298	Very Suitable	4.87	.298	Very Suitable
4	Use	4.75	.177	Very Suitable	4.80	.209	Very Suitable	4.90	.224	Very Suitable
5	Disposal	4.90	.224	Very Suitable	4.80	.274	Very Suitable	5.00	.000	Very Suitable
Total		4.77	.099	Very Suitable	4.78	.052	Very Suitable	4.92	.096	Very Suitable

The table 5 shows the evaluation of five components of fixed assets management: Allocation, Purchase, Registration, Use, and Disposal. Each component has been assessed on 3 criteria: Appropriateness, Accuracy, and Feasibility. The

experts rated each criterion on a scale, with the results indicating a high level of suitability across all components.

The analysis demonstrates a strong consensus among experts that the components of fixed assets management are very suitable for universities, with particular strengths in their feasibility and practical implementation. This uniformity in expert opinions underscores the effectiveness and applicability of the fixed assets management framework within the educational institutions surveyed.

Table 11 Mean, Standard Deviation, and Suitability of Allocation

No	Allocation	Appropriately			Accuracy			Feasibility		
		\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1	Allocation standards	4.60	.548	Very Suitable	4.80	.447	Very Suitable	4.80	.447	Very Suitable
2	Establishing system	4.80	.447	Very Suitable	4.80	.447	Very Suitable	5.00	.000	Very Suitable
3	Approval process	4.80	.447	Very Suitable	4.80	.447	Very Suitable	5.00	.000	Very Suitable
Total		4.73	.279	Very Suitable	4.80	.183	Very Suitable	4.93	.149	Very Suitable

The statistical analysis of Table 6 highlights that all indicators of the allocation process in fixed assets management are deemed very suitable by experts, with particular emphasis on their practical implementation (Feasibility). The data signifies a robust consensus on the effectiveness and applicability of these allocation indicators, underscoring their critical role in enhancing fixed assets management practices within universities.

Table 12 Mean, Standard Deviation, and Suitability of Purchase

No	Purchase	Appropriately			Accuracy			Feasibility		
		\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1	Agreement procurement	4.60	.548	Very Suitable	4.80	.447	Very Suitable	4.80	.447	Very Suitable
2	Government procurement	4.60	.548	Very Suitable	4.60	.548	Very Suitable	5.00	.000	Very Suitable
Total		4.60	.418	Very Suitable	4.70	.447	Very Suitable	4.90	.224	Very Suitable

The statistical analysis of Table 7 underscores that both indicators of the purchase process in fixed assets management—Agreement and Government procurement—are considered very suitable by experts, with particular emphasis on their feasibility. The analysis highlights a strong consensus on the effectiveness and applicability of these purchasing indicators, underscoring their importance in enhancing fixed assets management practices within universities.

Table 13 Mean, Standard Deviation, and Suitability of Registration

No	Registration	Appropriately			Accuracy			Feasibility		
		\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1	fixed assets acceptance	5.00	.000	Very Suitable	4.80	.447	Very Suitable	4.80	.447	Very Suitable
2	fixed assets inventory	4.80	.447	Very Suitable	4.80	.447	Very Suitable	5.00	.000	Very Suitable
3	Establishment of ledger	4.60	.548	Very Suitable	4.80	.447	Very Suitable	4.80	.447	Very Suitable
Total		4.80	.183	Very Suitable	4.80	.298	Very Suitable	4.87	.298	Very Suitable

The statistical review of Table 8 emphasizes the high suitability of all indicators of the registration process within fixed assets management. Notably, Fixed Assets Acceptance and Fixed Assets Inventory are highlighted for their practical implementation, as evidenced by their perfect scores in Feasibility. The consensus among experts underscores the effectiveness and critical nature of these Registration indicators in improving fixed assets management practices within universities.

Table 14 Mean, Standard Deviation, and Suitability of Use

No	Use	Appropriately			Accuracy			Feasibility		
		\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1	General fixed assets use	4.80	.447	Very Suitable	4.80	.447	Very Suitable	4.80	.447	Very Suitable
2	Special fixed assets use	4.60	.548	Very Suitable	4.80	.447	Very Suitable	5.00	.000	Very Suitable
3	fixed assets transfer	4.80	.447	Very Suitable	4.80	.447	Very Suitable	5.00	.000	Very Suitable
4	fixed assets leasing	4.80	.447	Very Suitable	4.80	.447	Very Suitable	4.80	.447	Very Suitable
Total		4.75	.177	Very Suitable	4.80	.209	Very Suitable	4.90	.224	Very Suitable

The statistical review of Table 9 highlights the high suitability of the Use indicators in fixed assets management, with particularly strong consensus on the feasibility of Special Fixed Assets Use and Fixed Assets Transfer. These findings indicate a robust agreement on the effectiveness and applicability of these practices within the realm of fixed assets management, demonstrating their importance in the efficient use of fixed assets within universities.

Table 15 Mean, Standard Deviation, and Suitability of Disposal

No	Disposal	Appropriately			Accuracy			Feasibility		
		\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1	Disposal scope	4.80	.447	Very Suitable	4.80	.447	Very Suitable	5.00	.000	Very Suitable
2	Disposal methods and procedures	5.00	.000	Very Suitable	4.80	.447	Very Suitable	5.00	.000	Very Suitable
Total		4.90	.224	Very Suitable	4.80	.274	Very Suitable	5.00	.000	Very Suitable

The statistical overview of Table 10 emphasizes the very high suitability of the disposal indicators in fixed assets management, with special mention of the unanimous consensus on the feasibility of both Disposal Scope and Disposal Methods and Procedures. These findings underline the effectiveness and applicability

of disposal practices, indicating their critical role in the efficient management of fixed assets within universities.

Phase 2: Explore the current state, desired state of the fixed assets management of the universities in Jiangxi Province

1. Analyzing the current state and desired state of fixed assets management of three universities in Jiangxi province

The researcher distributed 142 survey questionnaires to both full-time and part-time fixed assets staff across the three universities under study. Upon collecting the completed questionnaires, they utilized computer software (SPSS) to compute the mean and standard deviation for both the current and anticipated states of fixed assets management. The summarization of the results for the current and desired states of fixed assets management is presented as follows:

Table 16 Mean, Standard Deviation, Modified Priority Index, and Ranking of Fixed Assets Management Components

No	Components	Current State			Desired State			PNI _{modified}	Rank
		\bar{X}	S.D	Level	\bar{X}	S.D	Level		
1	Allocation	3.12	.379	Moderate	4.68	.303	Very High	0.5	1
2	Purchase	3.07	.364	Moderate	4.54	.372	Very High	0.48	2
3	Registration	3.10	.393	Moderate	4.55	.379	Very High	0.47	4
4	Use	3.11	.466	Moderate	4.57	.360	Very High	0.47	3
5	Disposal	3.13	.485	Moderate	4.54	.410	Very High	0.45	5
Total		3.11	.174	Moderate	4.58	.271	Very High	0.47	

Table 16 indicated that the data highlights a significant gap between the current moderate performance levels and the very high desired priority for improvement across all components of fixed assets management. This discrepancy underscores the need for strategic enhancements to align the current management practices with the higher expectations and priorities of the staff managing fixed assets within the surveyed universities.

Table 17 Mean, Standard Deviation, Modified Priority Index, and Ranking of Allocation

No	Allocation	Current State			Desired State			PNImodified	Rank
		\bar{X}	S.D	Level	\bar{X}	S.D	Level		
1	Follow the principle of matching the function and quantity of assets with the function of the unit, and allocate fixed assets by means of transfer, lease, and purchase.	3.25	.706	Moderate	4.70	.502	Very High	0.446	3
2	The university has established special systems for fixed assets allocation management, asset profit and loss compensation management, demonstration management of major assets allocation, and asset allocation supervision and management.	3.06	.702	Moderate	4.68	.499	Very High	0.529	2
3	All departments or individuals of the university shall submit applications for fixed assets allocation to the fixed assets management department, including application name, specifications, quantity, budget and reasons for application.	3.04	.693	Moderate	4.67	.487	Very High	0.536	1
Total		3.12	.379	Moderate	4.68	.303	Very High	0.5	1

Table 17 indicated that the total average for the current state across all sub-components of allocation is 3.12, with a standard deviation of 0.379, suggesting a uniform moderate performance level. The total average for the desired state is 4.68, with a standard deviation of 0.303, indicating a consistently very high level of priority for improvement in all aspects of allocation.

The data from Table 12 highlights a noticeable discrepancy between the current moderate performance levels and the very high desired improvements within the Allocation process of fixed assets management. This gap underscores the need for focused enhancements and strategic interventions to elevate the Allocation practices to meet the higher expectations and priorities identified by the stakeholders within the university's fixed assets management framework.

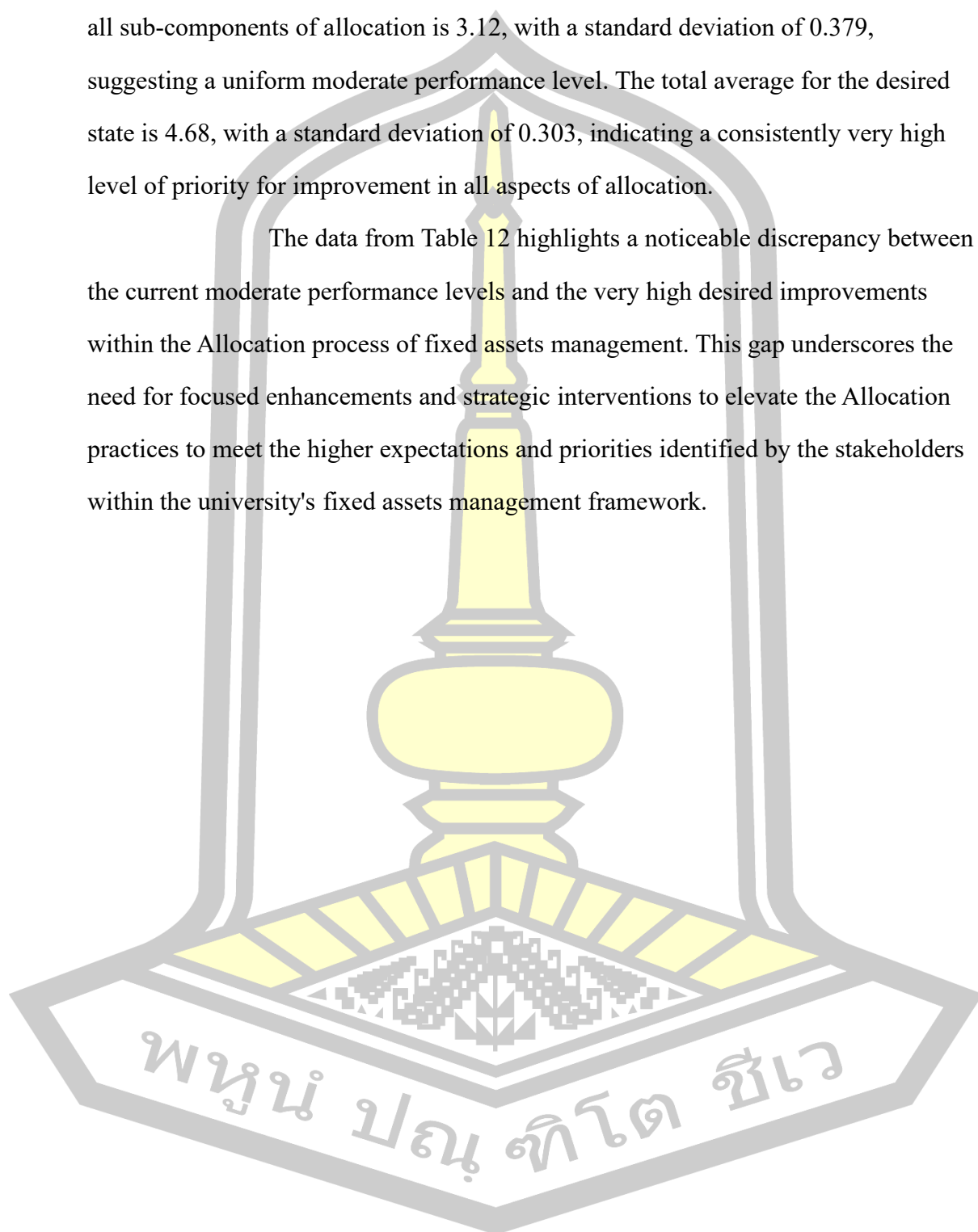


Table 18 Mean, Standard Deviation, Modified Priority Index, and Ranking of Purchase

No	Purchase	Current State			Desired State			PNImodified	Rank
		\bar{X}	S.D	Level	\bar{X}	S.D	Level		
1	Determine the procurement method based on the specifications, standards, procurement amount, etc. of the purchased goods.	3.08	.631	Moderate	3.08	.631	Very High	0.477	2
2	The procedure of agreement procurement is simple and convenient, which can improve the efficiency of procurement and meet the demanding time requirements of some procurement items.	3.05	.698	Moderate	3.05	.698	Very High	0.485	1
3	Promote government procurement, introduce competition mechanism into the procurement process, adapt to the requirements of market economy to broaden procurement channels, optimize procurement quality, reduce procurement funds, and reduce procurement costs.	3.07	.591	Moderate	3.07	.591	Very High	0.476	3
Total		3.07	.364	Moderate	3.07	.364	Very High	0.48	2

Table 18 revealed that the total average for the current state across the purchase component is 3.07, with a standard deviation of 0.364, suggesting a uniform moderate performance level. The total average for the desired state is 4.54, with a standard deviation of 0.372, indicating a uniformly very high level of priority for improvement in all aspects of purchase.

The data from Table 13 underscores a significant gap between the current moderate performance levels and the very high level of desired improvements within the Purchase process of fixed assets management. This discrepancy emphasizes

the need for strategic enhancements to align the Purchase practices with the higher expectations and priorities of the management framework for fixed assets within the surveyed institutions.

Table 19 Mean, Standard Deviation, Modified Priority Index, and Ranking of Registration

No	Registration	Current State			Desired State			PNImodified	Rank
		\bar{X}	S.D	Level	\bar{X}	S.D	Level		
1	By establishing a fixed assets acceptance system, the acceptance procedures, composition of the acceptance team, and acceptance responsibilities have been clarified.	3.06	.655	Moderate	4.51	.568	Very High	0.474	2
2	Conduct physical inventory, verification, and final settlement of fixed assets.	3.00	.684	Moderate	4.61	.517	Very High	0.537	1
3	Establish a fixed assets ledger.	3.25	.665	Moderate	4.53	.501	Very High	0.394	3
Total		3.10	.393	Moderate	4.55	.379	Very High	0.47	4

The analytical overview of Table 14, illustrates that the current operational performance is perceived as moderate, with mean scores delineated between 3.00 and 3.25 for essential processes. These processes encompass the establishment of a fixed assets acceptance system, the execution of physical inventories and verifications, and the creation of a fixed assets ledger.

Notwithstanding the present moderate state of operations, there exists a pronounced aspiration for substantial enhancement, as evinced by the desired state levels, where mean scores range from 4.51 to 4.61, indicating a consensus on the necessity for significant improvement.

This observed divergence between the current state's moderate performance levels and the ambitious desired state of improvements underscores a compelling demand for strategic advancements in the Registration processes. It highlights an imperative for targeted interventions and comprehensive policy reforms aimed at reconciling the Registration practices with the elevated anticipations and priorities set forth by the administrative framework governing fixed assets within the academic institutions under consideration.

Table 20 Mean, Standard Deviation, Modified Priority Index, and Ranking of Use

No	Use	Current State			Desired State			PNImodified	Rank
		\bar{X}	S.D	Level	\bar{X}	S.D	Level		
1	The asset management department has a comprehensive and accurate grasp of the use of assets to enhance the feasibility of the use of assets.	3.15	.743	Moderate	4.58	.495	Very High	0.454	3
2	Efficient use of fixed assets, strict implementation of fixed assets use norms.	3.11	.800	Moderate	4.61	.531	Very High	0.482	1
3	Establish a performance evaluation mechanism and incorporate it into the assessment of functional objectives, project management, assets and laboratory management of relevant departments.	3.07	.721	Moderate	4.53	.501	Very High	0.476	2
Total		3.11	.466	Moderate	4.57	.360	Very High	0.47	3

Table 20 indicated that the examination of the "Use" reveals a moderate level of performance in the current state, with mean scores ranging from 3.07 to 3.15 across various processes, including the asset management department's comprehension of asset utilization, efficient use of fixed assets according to established norms, and the establishment of a performance evaluation mechanism. Despite the moderate ratings, there exists a pronounced desire for substantial

enhancement, as indicated by the desired state levels, with mean scores between 4.53 and 4.61, demonstrating a consensus on the need for significant improvement.

This discrepancy between the moderate performance levels in the current state and the ambitious expectations for the desired state underscores a compelling demand for strategic improvements in the utilization processes of fixed assets management. It emphasizes the necessity for targeted interventions and comprehensive policy reforms, aimed at aligning the utilization practices with the elevated expectations and priorities outlined by the stakeholders within the framework governing fixed assets management in the academic institutions evaluated.

Table 21 Mean, Standard Deviation, Modified Priority Index, and Ranking of Disposal

No	Disposal	Current State			Desired State			PNI _{modified}	Rank
		\bar{X}	S.D	Level	\bar{X}	S.D	Level		
1	Determine the scope for disposal of fixed assets.	3.14	.720	Moderate	4.57	.538	Very High	0.455	2
2	Determine the method for disposal of fixed assets.	3.08	.748	Moderate	4.54	.554	Very High	0.474	1
3	Determine the procedure for disposal of fixed assets.	3.18	.603	Moderate	4.52	.515	Very High	0.421	3
Total		3.13	.485	Moderate	4.54	.410	Very High	0.45	5

Table 21, the analysis of the "Disposal" indicates a moderate level of performance in its current state, with mean scores for various processes such as determining the scope, method, and procedure for the disposal of fixed assets ranging from 3.08 to 3.18. Despite these moderate performance levels, there is a marked aspiration for significant improvement, as evidenced by the desired state levels, with mean scores between 4.52 and 4.57, highlighting a consensus on the necessity for considerable enhancement.

This observed gap between the current state's moderate performance levels and the ambitious desired improvements emphasizes a strong demand for strategic enhancements in the disposal processes of fixed assets management. It underscores the need for focused interventions and comprehensive policy reforms aimed at reconciling the disposal practices with the elevated anticipations and priorities established by the stakeholders within the framework governing fixed assets management in the academic institutions reviewed.

2. Analysis of the Priority Demand Index for fixed assets Management of 3 universities in Jiangxi Province

The researchers have identified several priority needs in fixed assets management across three universities in Jiangxi Province, summarized as follows:

1) Allocation of fixed assets: The demand analysis highlights the necessity for transparent and standardized allocation application processes. The establishment of dedicated systems and frameworks for managing fixed assets allocation, including profit and loss compensation and demonstration management, is deemed critical. These findings suggest a strong desire for more efficient and compliant allocation mechanisms, pointing towards the need for improved transparency and standardization in university fixed assets allocation.

2) Purchase of fixed assets: It is imperative to establish standardized procurement methods tailored to the specifications, standards, and amounts of purchased goods. Simplifying agreement procurement procedures to enhance procurement efficiency and advocating for government procurement to introduce competitive mechanisms are highlighted as high-priority needs. These strategies aim to rationalize the procurement process, ensuring effective management and utilization of fixed assets and elevating the overall management level of university fixed assets.

3) Registration of fixed assets: Prioritized needs include establishing a comprehensive acceptance system, conducting regular physical inventories, and

creating a well-organized ledger for fixed assets. These actions are aimed at boosting transparency, accuracy, and efficiency in fixed assets registration, thus contributing to the effective management and utilization of assets within universities.

4) Use of fixed assets: Establishing a detailed and accurate system for managing asset usage, emphasizing efficient utilization and adherence to norms, and incorporating a performance evaluation mechanism into departmental assessments are identified as crucial priorities. These measures are intended to enhance the monitoring and optimization of asset utilization, ensuring rational use and prolonging the lifespan of assets.

5) Disposal of fixed assets: Establishing clear criteria for determining the scope, methods, and procedures for fixed assets disposal is underscored as a priority. Implementing systematic and transparent disposal approaches and incorporating eco-friendly disposal methods are recommended to improve the efficiency and sustainability of fixed assets management throughout their lifecycle.

In summary, addressing these identified priority needs across the different components of fixed assets management is essential for enhancing effectiveness, standardization, and sustainability in managing university assets. These targeted improvements are expected to significantly elevate the overall quality of fixed assets management within the academic institutions studied.

Phase 3: Develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province

1. Analyze the interview results of 5 experts from 3 universities in Jiangxi Province. Based on the research results on the current state, desired state, and priority demand index of fixed assets management of 3 universities in Jiangxi Province, the researchers obtained the following results:

1.1 Allocation of fixed assets

The interview findings concerning the allocation of fixed assets underscore the significant impact digital technology has had on enhancing the efficiency and accuracy of fixed asset allocation processes within universities. The data gathered from the interviews revealed the following key insights:

"...Digital technology makes the allocation of fixed assets more efficient and accurate. Through data analysis and intelligent decision support systems, we can better understand the usage of assets, predict future needs, and optimize allocation. To better achieve this goal, we need to establish a comprehensive digital asset library for real-time monitoring and analysis of asset allocation."...

(1st Interviewee, January 29, 2024: Face-to-Face Interview)

"...In the context of promoting sustainable development, universities should adjust their fixed assets allocation strategies and consider more the environmental and social impacts of assets. Digital technology can help us better track and analyze the environmental impact of assets, thereby formulating more sustainable asset allocation strategies."...

(2nd Interviewee, January 29, 2024: Face-to-Face Interview)

"...We should use big data analysis to make data-driven asset allocation decisions. This can not only improve the accuracy of decision-making, but also enhance the synergy and flexibility of asset allocation. At the same time, we also need to ensure compliance review of procurement contracts to ensure compliance with regulations and policies."...

(3rd Interviewee, January 30, 2024: Face-to-Face Interview)

"...In order to improve the integrity and credibility of data, we should introduce auditing techniques. In addition, providing mobile terminal applications is also necessary, which can promote real-time information updates and data accuracy."...

(4th Interviewee, January 30, 2024: Face-to-Face Interview)

"...In addition to technological improvements, we also need to develop a comprehensive training plan to enhance employee operational skills through various means. At the same time, it is necessary to establish a regular review process for asset allocation criteria in order to make adjustments based on actual experience and market changes."...

(5th Interviewee, January 31, 2024: Face-to-Face Interview)

In summary, the utilization of data analysis and intelligent decision-support systems enables universities to gain a deeper understanding of asset usage, anticipate future needs, and refine allocation strategies effectively. To realize these advancements, the establishment of an extensive digital asset library is crucial. Furthermore, in alignment with the principles of sustainable development, universities are urged to adapt their fixed assets allocation strategies to consider environmental and social repercussions. The adoption of big data analytics for informing asset allocation decisions promotes enhanced cooperation and adaptability while ensuring procurement contracts undergo meticulous compliance reviews. The implementation of audit technologies and mobile application tools further augments the integrity and reliability of data management.

Beyond technological enhancements, the development of a thorough training program is imperative to equip relevant personnel with the necessary skills and knowledge. Additionally, instituting a regular review process for asset allocation criteria ensures that universities can adapt to changing needs and standards over time. Together, these measures not only foster technical proficiency but also cultivate a culture of continuous improvement and strategic foresight in the management of fixed assets within the academic sector.

1.2 Purchase of fixed assets

The interview outcomes concerning the purchase of fixed assets reveal that universities have implemented a series of comprehensive measures to guarantee both the effectiveness and the scientific rigor of their procurement processes. The investigator provided interview results, such as:

"...When purchasing fixed assets, we focus on conducting regular market research to understand the latest procurement technologies and trends. Through this approach, we can ensure that the purchased items are worth it, that is, the best value for money. In addition, establishing a supplier database is also one of the key steps for us to ensure quality and reliability."...

(1st Interviewee, January 29, 2024: Face-to-Face Interview)

"...In the procurement process, we focus on balancing the needs and opinions of all parties. To achieve this goal, we have established a supply chain collaborative optimization center and maintained close cooperation with suppliers. By working closely with all parties involved, we can better understand and meet their needs, ensuring the smooth progress of the procurement process."...

(2nd Interviewee, January 29, 2024: Face-to-Face Interview)

"...For the current procurement process, we emphasize the deployment of digital procurement systems, integrating big data analysis and intelligent decision support systems. This not only improves procurement efficiency, reduces human errors and costs, but also enables us to better evaluate and select potential suppliers, ensuring the scientific and efficient procurement process."...

(3rd Interviewee, January 30, 2024: Face-to-Face Interview)

"...When evaluating the procurement process, we pay special attention to the training and professional skill enhancement of procurement personnel. By implementing training programs, utilizing online training and workshops, we are committed to regularly updating the knowledge and skills of

procurement personnel to respond to constantly changing regulatory and technical requirements."...

(4th Interviewee, January 30, 2024: Face-to-Face Interview)

"...In terms of fixed assets procurement management, we emphasize the establishment of risk management mechanisms and the formulation of sustainable procurement goals. This helps to identify and respond to potential procurement risks in advance, while ensuring that our procurement goals are aligned with sustainable development principles. This comprehensive management approach helps to evaluate and improve our procurement process."...

(5th Interviewee, January 31, 2024: Face-to-Face Interview)

In summary, universities are not only dedicating efforts to conducting market research to stay abreast of the latest procurement technologies and trends but also establishing a robust supplier database to secure quality and reliability. In aiming to balance the needs and viewpoints of all stakeholders, universities actively pursue close collaboration with suppliers. The adoption of digital procurement systems, alongside the integration of big data analytics, has significantly enhanced procurement efficiency and ensured that decisions are made on a scientific basis. Furthermore, there is a strong emphasis on the training and professional development of procurement personnel, equipping them to navigate the evolving landscape of regulatory and technical requirements effectively.

Regarding the management of fixed assets usage, universities have implemented risk management frameworks and set sustainable procurement objectives to align the procurement processes with the principles of sustainable development. This holistic management strategy is pivotal in assessing and refining the entire procurement procedure, ensuring a seamless, efficient, and environmentally responsible approach to procuring fixed assets.

1.3Registration of fixed assets

The interview findings regarding the registration of fixed assets suggest that the school is actively engaged in a comprehensive optimization of its fixed assets registration management. This initiative is focused on enhancing both the efficiency and accuracy of the management process. The investigator provided interview results, such as:

"...Our primary focus on improving the registration and management of fixed assets in universities is to develop more practical and feasible processes. It is necessary to ensure that each department understands and complies with this process based on the specific situation of the school, in order to improve overall management efficiency and accuracy."...

(1st Interviewee, January 29, 2024: Face-to-Face Interview)

"...In terms of fixed assets registration management, we are actively researching and adopting modern technological means. Choosing technologies suitable for schools, such as RFID, barcodes, etc., aims to improve the accuracy and efficiency of registration, and is committed to promoting innovation in management methods."...

(2nd Interviewee, January 29, 2024: Face-to-Face Interview)

"...In order to strengthen supervision and auditing, we plan to combine digital technology and introduce intelligent terminal applications to simplify employee registration operations, thereby promoting real-time data updates. This measure will ensure the accuracy and completeness of data, making registration management more efficient."...

(3rd Interviewee, January 30, 2024: Face-to-Face Interview)

"...We emphasize in-depth research on relevant regulations and policies to ensure that the formulation and implementation of asset registration standards comply with legal requirements. Establishing a legal review mechanism is

key to ensuring compliance with asset registration regulations and helps reduce potential legal risks."...

(4th Interviewee, January 30, 2024: Face-to-Face Interview)

"...In order to strengthen the supervision of fixed assets registration management, we have developed a comprehensive training plan that covers all personnel related to asset registration. At the same time, establishing an effective communication mechanism to ensure consistent understanding of registration criteria among departments can help reduce errors in information transmission."...

(5th Interviewee, January 31, 2024: Face-to-Face Interview)

In summary, universities are diligently reevaluating and enhancing their fixed assets registration processes to ensure they are both practical and compliant across various departments. Concurrently, there is a concerted effort to integrate modern technological solutions to streamline the registration process and elevate its precision. To bolster supervision and facilitate reviews, plans are underway to deploy intelligent terminal applications capable of updating data in real-time, thereby guaranteeing its accuracy and completeness. Furthermore, there is a pronounced focus on conducting thorough research into relevant regulations and policies to ensure that asset registration standards are in strict adherence to legal mandates.

To achieve a uniform understanding of the registration criteria among all pertinent staff, universities are committed to organizing comprehensive training sessions and establishing efficient communication channels. By taking these steps, universities aim to significantly enhance the standardization and normalization of fixed assets registration management. This approach is expected to provide robust support for the sustainable development of the institutions, ensuring

that their fixed assets management practices remain robust, transparent, and aligned with best practices and regulatory expectations.

1.4 Use of fixed assets

The interview findings on the utilization of fixed assets reveal that universities place a significant emphasis on regulating the usage of various assets within the scope of fixed assets management. This includes equipment, laboratory facilities, office supplies, and more, with the overarching goal of ensuring these assets effectively support the institution's normal operations. The investigator provided interview results, such as:

"...We attach great importance to clarifying the usage standards of various assets, including equipment, laboratory facilities, office supplies, etc., regarding the importance of fixed assets usage management in school operations. Only standardized use can ensure that these assets can provide strong support for the normal operation of the school."...

(1st Interviewee, January 29, 2024: Face-to-Face Interview)

"...To improve the efficiency of fixed assets utilization, we have taken measures to introduce intelligent monitoring systems to achieve real-time tracking of asset usage. This not only improves the accuracy of management, but also helps to timely identify and solve potential problems, ensuring the effective utilization of assets."...

(2nd Interviewee, January 29, 2024: Face-to-Face Interview)

"...In the management of fixed assets usage, we emphasize the use of mobile applications and cloud platforms to facilitate employee asset registration and queries. This measure simplifies the process, improves work efficiency, and makes asset usage more convenient and transparent."...

(3rd Interviewee, January 30, 2024: Face-to-Face Interview)

"...To ensure that employees comprehend every aspect of the fixed assets usage approaches, we concentrate on developing an extensive training program. Adequate training is essential for employees to better understand and adhere to usage standards, ultimately enhancing the standardization and efficacy of management."...

(4th Interviewee, January 30, 2024: Face-to-Face Interview)

"...We motivate employees to offer suggestions for improvement and set up a feedback system for users to optimize the use of fixed assets. Furthermore, carrying out regular satisfaction surveys to gauge user appreciation and concerns regarding the approaches enables the continual refinement of management strategies."...

(5th Interviewee, January 31, 2024: Face-to-Face Interview)

In summary, universities are taking proactive measures to enhance the efficiency of asset use by implementing intelligent monitoring systems for real-time tracking, which improves management accuracy, swiftly identifies and resolves issues, and ensures effective asset utilization. There's a focused effort on utilizing mobile applications and cloud platforms to streamline processes, enhance work efficiency, and make asset use more convenient and transparent.

Universities are committed to ensuring employees are thoroughly acquainted with all aspects of the fixed assets use approach through comprehensive training programs, aiming to boost management standardization and effectiveness. Encouraging employees to offer suggestions for improvement, establishing a user feedback mechanism, and conducting regular satisfaction surveys are strategies aimed at continuously optimizing management approaches. These steps are designed to foster an environment of ongoing enhancement, ensuring the approaches remain adaptable and effectively meet the dynamic needs of the institutions.

1.5 Disposal of fixed assets

The interview findings on the disposal of fixed assets suggest that the school has implemented detailed processes within the management of fixed assets disposal. This initiative aims to ensure transparency and clarity throughout the entire disposal process. The investigator provided interview results, such as:

"...For the management system of fixed assets disposal, we have developed a detailed disposal process to ensure that the entire process is clear and transparent. This includes clear regulations on various stages such as asset evaluation, approval, and auction, which are one of the key factors for successful disposal."...

(1st Interviewee, January 29, 2024: Face-to-Face Interview)

"...In the digital age, we actively introduce advanced technologies such as artificial intelligence, big data analysis, and the Internet of Things to improve the efficiency of fixed assets disposal processes. Using online auction platforms and automated evaluation tools to make the entire disposal process more intelligent and efficient."...

(2nd Interviewee, January 29, 2024: Face-to-Face Interview)

"...Faced with the challenge of environmental protection, we have focused on the concept of sustainable development and formulated green and environmentally friendly asset disposal strategies. Prioritize choosing environmentally friendly and renewable disposal methods to minimize negative impacts on the environment."...

(3rd Interviewee, January 30, 2024: Face-to-Face Interview)

"...To improve the transparency and credibility of the disposal process, we have adopted blockchain technology to establish tamper proof records of asset disposal. This helps to reduce the risk of information asymmetry and ensure compliance in the disposal process."...

(4th Interviewee, January 30, 2024: Face-to-Face Interview)

"...We have established a comprehensive risk management plan to identify and evaluate potential risks in advance, ensuring the compliance of the disposal process. Through regular legal reviews, we ensure that the disposal complies with relevant regulations and policies, ensuring the legal compliance of the disposal."...

(5th Interviewee, January 31, 2024: Face-to-Face Interview)

In summary, the disposal process at universities involves clearly defined regulations covering stages such as asset evaluation, approval, and auctioning, which are key to ensuring successful disposal outcomes. Embracing advancements in the digital era, universities are incorporating technologies like artificial intelligence, big data analytics, and the Internet of Things. These technologies facilitate the utilization of online auction platforms and automated evaluation tools, significantly enhancing the efficiency and intelligence of the disposal process.

Furthermore, universities have developed strategies for green and environmentally friendly asset disposal, prioritizing methods that minimize environmental impact. The introduction of blockchain technology has also increased the transparency and credibility of the disposal process, reducing risks associated with information asymmetry. A comprehensive risk management plan has been established to ensure that the disposal process adheres to regulatory compliance, highlighting the universities' commitment to legal integrity and environmental responsibility in asset disposal practices.

2. Researchers interviewed 5 experts of 3 universities in Jiangxi Province, who have good practices in fixed assets management. The researchers have summarized the viewpoints of various experts with the aim of improving the level of fixed assets management.

Table 22 Summary and Analysis of "Allocation"

Index	Interview Results	Summarize the Results
1. Asset allocation principles	1. Promote the widespread application of digital technology in asset allocation, utilizing data analysis and intelligent decision support systems.	1. University administrators clarify relevant regulations and policies to ensure that the configuration process complies with legal requirements.
2. Asset profit and loss treatment	2. Establish a comprehensive digital asset library for real-time monitoring and analysis of asset allocation.	2. University administrators establish and improve internal audit systems, conduct regular audits of fixed asset management processes, and ensure compliance.
3. Main asset allocation models	3. Consider the environmental and social impacts of assets and promote sustainable asset allocation strategies.	3. University administrators determine the overall goals of configuration standards, including meeting requirements, improving efficiency, and reducing costs.
4. Asset allocation supervision mechanism	4. By sharing information and resources, improve the synergy and flexibility of asset allocation.	4. The fixed assets management department introduces digital technologies such as big data analysis and artificial intelligence to improve the scientificity and efficiency of configuration decision-making.
5. Application process for fixed assets allocation	5. Introduce audit techniques to emphasize the integrity and credibility of data.	5. The fixed assets management department considers environmental factors in allocation decisions and advocates for sustainable resource utilization.
6. Application content and reasons	6. Develop a comprehensive training plan to enhance employee operational skills through face-to-face, online, and virtual reality training.	6. The fixed assets management department uses data analysis tools to monitor the configuration process to ensure transparency, regulatory compliance, and efficiency.
	7. Establish a regular review process for asset allocation criteria, and make adjustments based on actual experience and market changes.	
	8. Gather user feedback and suggestions from participants to continually refine asset allocation approaches.	

Table 22 (Continued)

Index	Interview Results	Summarize the Results
		<p>7. The fixed assets management department shall establish and improve a fixed asset insurance system to prevent potential risks and safeguard the interests of the school.</p> <p>8. The fixed assets management department regularly evaluates the actual effectiveness of allocation decisions to ensure that the allocated assets meet the needs of the school.</p> <p>9. The fixed assets management department evaluates the cost and benefits of allocation decisions and optimizes allocation strategies.</p> <p>10. The fixed assets management department shall strengthen training and education to ensure that relevant personnel understand and comply with the problems discovered during the inspection process.</p> <p>11. The fixed assets management department regularly assesses fixed asset management personnel, with clear rewards and punishments, to improve work enthusiasm and sense of responsibility.</p>

According to the summary results in Table 22, this result will be used to draft approaches for fixed assets management in universities. In "Allocation", we conclude that:

1) University administrators clarify relevant regulations and policies to ensure that the configuration process complies with legal requirements.

2) University administrators establish and improve internal audit systems, conduct regular audits of fixed asset management processes, and ensure compliance.

3) University administrators determine the overall goals of configuration standards, including meeting requirements, improving efficiency, and reducing costs.

4) The fixed assets management department introduces digital technologies such as big data analysis and artificial intelligence to improve the scientificity and efficiency of configuration decision-making.

5) The fixed assets management department considers environmental factors in allocation decisions and advocates for sustainable resource utilization.

6) The fixed assets management department uses data analysis tools to monitor the configuration process to ensure transparency, regulatory compliance, and efficiency.

7) The fixed assets management department shall establish and improve a fixed asset insurance system to prevent potential risks and safeguard the interests of the school.

8) The fixed assets management department regularly evaluates the actual effectiveness of allocation decisions to ensure that the allocated assets meet the needs of the school.

9) The fixed assets management department evaluates the cost and benefits of allocation decisions and optimizes allocation strategies.

10) The fixed assets management department shall strengthen training and education to ensure that relevant personnel understand and comply with the problems discovered during the inspection process.

11) The fixed assets management department regularly assesses fixed asset management personnel, with clear rewards and punishments, to improve work enthusiasm and sense of responsibility.

Table 23 Summary and Analysis of "Purchase"

Index	Interview Results	Summarize the Results
1. Procurement objectives 2. Procurement process 3. Procurement budget allocation 4. Flexibility of Agreement 5. The necessity of Procurement 6. Methods to introducing a competitive mechanism 7. The necessity of introducing a competitive mechanism 8. Methods to improve procurement efficiency 9. Strategies for reducing procurement costs	1. Conduct regular market research to understand the latest procurement technologies and trends. 2. Establish a supplier database to evaluate the reputation, quality, and reliability of potential suppliers. 3. Regularly review regulatory changes and update procurement approaches promptly to ensure compliance. 4. Deploy a digital procurement system, integrate big data analysis and intelligent decision support systems. 5. Utilize electronic procurement platforms to improve procurement efficiency, reduce human errors and costs. 6. Develop clear procurement contract standards and emphasize compliance review of contracts. 7. Implement training programs for procurement personnel to enhance their professional skills and regulatory awareness.	1. University administrators clarify relevant regulations and policies to ensure that the procurement process complies with legal requirements. 2. The procurement department understands the procurement needs of various departments in universities, including teaching, scientific research, administration, and other aspects. 3. The procurement department sets the overall goal of procurement standards, including meeting the needs of each department, improving procurement efficiency, and reducing costs. 4. The procurement department introduces digital technologies such as big data analysis and electronic procurement platforms to improve the scientificity and efficiency of procurement decisions.

Table 23 (Continued)

Index	Interview Results	Summarize the Results
	<p>8. Establish a risk management mechanism to identify and respond to potential procurement risks in advance.</p> <p>9. Collect user feedback and suggestions from participants to continuously improve procurement approaches.</p> <p>10. Emphasize transparency in procurement decisions and establish a social responsibility framework.</p>	<p>5. The procurement department establishes close cooperation with suppliers to ensure the synergy and flexibility of the supply chain.</p> <p>6. The procurement department strengthens the professional training of procurement personnel, improves their business quality and legal awareness, to ensure the standardized operation of the procurement process.</p> <p>7. The procurement department evaluates the cost and benefits of procurement decisions and optimizes procurement strategies.</p> <p>8. The procurement department focuses on information disclosure during the procurement process, improves transparency, and facilitates the supervision and management of procurement activities by the public and relevant departments.</p> <p>9. Procurement uses data analysis tools to monitor the procurement process to ensure transparency, regulatory compliance, and efficiency.</p> <p>10. The procurement department strengthens the identification and prevention of procurement risks, formulates targeted risk response measures, and ensures the safe and stable conduct of procurement activities.</p>

According to the summary results in Table 23, this result will be used to draft approaches for fixed assets management in universities. In "Purchase", we conclude that:

1) University administrators clarify relevant regulations and policies to ensure that the procurement process complies with legal requirements.

2) The procurement department understands the procurement needs of various departments in universities, including teaching, scientific research, administration, and other aspects.

3) The procurement department sets the overall goal of procurement standards, including meeting the needs of each department, improving procurement efficiency, and reducing costs.

4) The procurement department introduces digital technologies such as big data analysis and electronic procurement platforms to improve the scientificity and efficiency of procurement decisions.

5) The procurement department establishes close cooperation with suppliers to ensure the synergy and flexibility of the supply chain.

6) The procurement department strengthens the professional training of procurement personnel, improves their business quality and legal awareness, to ensure the standardized operation of the procurement process.

7) The procurement department evaluates the cost and benefits of procurement decisions and optimizes procurement strategies.

8) The procurement department focuses on information disclosure during the procurement process, improves transparency, and facilitates the supervision and management of procurement activities by the public and relevant departments.

9) Procurement uses data analysis tools to monitor the procurement process to ensure transparency, regulatory compliance, and efficiency.

10) The procurement department strengthens the identification and prevention of procurement risks, formulates targeted risk response measures, and ensures the safe and stable conduct of procurement activities.

Table 24 Summary and Analysis of "Registration"

Index	Interview Results	Summarize the Results
1. fixed assets registration process 2. Ledger system 3. Physical inventory steps 4. Verification criteria 5. Settlement procedures 6. Acceptance system regulations 7. Team Responsibilities	<p>1. Based on the specific situation of the school, develop actionable processes to ensure that all departments can understand and comply.</p> <p>2. Research and select modern technological means suitable for schools, such as RFID, barcodes, etc., to improve the accuracy and efficiency of registration.</p> <p>3. Conduct in-depth research on relevant regulations and policies to ensure that the formulation and implementation of approaches comply with the requirements of laws and regulations.</p> <p>4. Establish a legal review mechanism to ensure regulatory compliance with asset registration and reduce legal risks.</p> <p>5. Design a comprehensive training plan that covers all personnel related to asset registration, including operators and managers.</p> <p>6. Establish a communication mechanism to ensure consistent understanding of registration criteria among various departments both inside and outside the school, and reduce errors in information transmission.</p>	<p>1. The fixed assets management department shall determine the goals and scope of formulating fixed asset registration standards, and clarify the schedule of the plan.</p> <p>2. The fixed assets management department collects relevant regulations and policies to understand the legal requirements for registration and the actual needs of the school.</p> <p>3. The fixed assets management department formulates fixed asset registration standards, including registration data requirements, processes, and division of responsibilities.</p> <p>4. The fixed assets management department shall determine the specific operational steps for fixed asset registration, including the technical tools used, relevant training, etc. (</p> <p>5. The fixed assets management department regularly inspects the implementation of fixed asset registration standards to ensure compliance with expected goals.</p>

Table 24 (Continued)

Index	Interview Results	Summarize the Results
	<p>7. Design a regular internal review process to evaluate the implementation of asset registration standards, identify issues and make timely corrections.</p> <p>8. Research and adopt advanced data security technologies to ensure the security of registered data and prevent the risk of information leakage.</p> <p>Emphasize the privacy protection awareness of employees in asset registration, and collect and use relevant information reasonably.</p>	<p>6. The fixed assets management department conducts internal audits to evaluate the compliance and effectiveness of approaches, and collects feedback from users and relevant personnel.</p> <p>7. The fixed assets management department shall take necessary measures to improve and perfect the fixed asset registration standards based on the results of the inspection stage.</p> <p>8. The fixed assets management department provides training and communication mechanisms to ensure the correct implementation of the approaches.</p>

According to the summary results in Table 24, this result will be used to draft approaches for fixed assets management in universities. In "Registration", we conclude that:

- 1) The fixed assets management department shall determine the goals and scope of formulating fixed asset registration standards, and clarify the schedule of the plan.
- 2) The fixed assets management department collects relevant regulations and policies to understand the legal requirements for registration and the actual needs of the school.
- 3) The fixed assets management department formulates fixed asset registration standards, including registration data requirements, processes, and division of responsibilities.

4) The fixed assets management department shall determine the specific operational steps for fixed asset registration, including the technical tools used, relevant training, etc.

5) The fixed assets management department regularly inspects the implementation of fixed asset registration standards to ensure compliance with expected goals.

6) The fixed assets management department conducts internal audits to evaluate the compliance and effectiveness of approaches, and collects feedback from users and relevant personnel.

7) The fixed assets management department shall take necessary measures to improve and perfect the fixed asset registration standards based on the results of the inspection stage.

8) The fixed assets management department provides training and communication mechanisms to ensure the correct implementation of the approaches.

Table 25 Summary and Analysis of "Use"

Index	Interview Results	Summarize the Results
1. Asset optimization	1. Clarify the usage standards for various types of assets, including equipment, laboratory facilities, office supplies, etc.	1. University administrators determine the overall goals and strategies of the fixed asset usage approaches, clarify usage standards and related policies.
2. Performance evaluation	2. Introduce an intelligent monitoring system to achieve real-time tracking of fixed assets usage.	2. The fixed assets management department shall develop a detailed usage plan, including standardized usage scenarios and usage cycles for various assets.
3. Goal setting	3. Utilize mobile applications and cloud platforms to facilitate employee asset registration and queries.	3. The fixed assets management department shall establish responsible departments and personnel, implement usage approaches, and clarify the responsibilities of relevant parties.
4. Resource integration	4. Design a comprehensive training plan to ensure that employees understand all aspects of the fixed assets usage approaches.	
5. Information management		
6. Risk control		
7. Continuous improvement		
8. Training and Education		

Table 25 (Continued)

Index	Interview Results	Summarize the Results
	<p>5. Establish a user feedback mechanism to encourage employees to propose improvement suggestions and promote the continuous optimization of approaches. Regularly conduct satisfaction surveys to understand user recognition and dissatisfaction with the approaches.</p> <p>6. Emphasize safety regulations in the use of fixed assets to ensure the safety of employees and assets.</p> <p>7. Follow relevant regulations and policies to ensure the compliance of asset usage.</p> <p>8. Introduce sustainable asset usage concepts and promote green and environmentally friendly usage methods.</p> <p>9. Promote communication and collaboration among departments to ensure the sharing and rational utilization of assets.</p> <p>10. Anticipate possible emergency situations, develop emergency response procedures, and ensure the safe and orderly use of assets.</p>	<p>4. The fixed assets management department introduces digital technology, establishes an intelligent monitoring system, tracks asset usage in real-time, and improves management efficiency.</p> <p>5. The fixed assets management department provides training and education to ensure that employees understand and can operate fixed assets correctly, and promote standardized use.</p> <p>6. The fixed assets management department designs regular inspection and review mechanisms to evaluate the implementation of usage approaches, identify issues, and promptly correct them.</p> <p>7. The fixed assets management department introduces a user feedback mechanism to encourage employees to propose improvement suggestions and promote the continuous optimization of the approaches.</p> <p>8. The fixed assets management department promotes communication and collaboration among departments to ensure the sharing and rational utilization of assets.</p> <p>9. The fixed assets management department continuously optimizes the allocation of fixed assets, adjusts the asset structure according to actual needs, and improves the efficiency of asset utilization.</p>

According to the summary results in Table 25, this result will be used to draft approaches for fixed assets management in universities. In "Use", we conclude that:

- 1) University administrators determine the overall goals and strategies of the fixed assets usage approaches, clarify usage standards and related policies.
- 2) The fixed assets management department shall develop a detailed usage plan, including standardized usage scenarios and usage cycles for various assets.
- 3) The fixed assets management department shall establish responsible departments and personnel, implement usage approaches, and clarify the responsibilities of relevant parties.
- 4) The fixed assets management department introduces digital technology, establishes an intelligent monitoring system, tracks asset usage in real-time, and improves management efficiency.
- 5) The fixed assets management department provides training and education to ensure that employees understand and can operate fixed assets correctly, and promote standardized use.
- 6) The fixed assets management department designs regular inspection and review mechanisms to evaluate the implementation of usage approaches, identify issues, and promptly correct them.
- 7) The fixed assets management department introduces a user feedback mechanism to encourage employees to propose improvement suggestions and promote the continuous optimization of the approaches.
- 8) The fixed assets management department promotes communication and collaboration among departments to ensure the sharing and rational utilization of assets.

9) The fixed assets management department continuously optimizes the allocation of fixed assets, adjusts the asset structure according to actual needs, and improves the efficiency of asset utilization.

Table 26 Summary and Analysis of "Disposal"

Index	Interview Results	Summarize the Results
1. Evaluation and decision-making before disposal of fixed assets	1. Develop a detailed disposal process to ensure its clarity and transparency, including asset evaluation, approval, auction, and other stages.	1. The fixed assets management department shall develop a clear asset disposal plan, specifying disposal objectives and principles.
2. Develop a detailed plan and steps for the disposal of fixed assets	2. Introduce advanced digital technologies such as artificial intelligence, big data analysis, and the Internet of Things to improve the efficiency of the disposal process.	2. The fixed assets management department determines the procedures and processes for asset disposal, including stages such as approval, evaluation, and auction.
3. Determine the transaction terms and conditions for the disposal of fixed assets	Consider using online auction platforms, automated evaluation tools, etc.	3. The fixed assets management department shall form a professional team or entrust professional institutions to conduct asset evaluation and pricing.
4. Procedures and transactions for the disposal of fixed assets	3. Promote the concept of sustainable development and develop green and environmentally friendly asset disposal strategies. Prioritize choosing environmentally friendly and renewable disposal methods to reduce negative impacts on the environment.	4. The fixed assets management department shall establish a regular asset disposal audit mechanism to ensure that the asset disposal procedures comply with regulations and rules.
5. Audit and summary of fixed assets disposal	4. Establish tamper proof records of asset disposal, improve the transparency and credibility of the disposal process, and reduce the risk of information asymmetry.	5. The fixed assets management department, audit department, and finance department simultaneously monitor the disposal process, collect feedback information after disposal, and evaluate the effectiveness of the disposal process.
	5. Entrust professional institutions for evaluation and disposal to improve professional level.	

Table 26 (Continued)

Index	Interview Results	Summarize the Results
	6. Develop a training plan to enhance their understanding and ability to implement disposal approaches. 7. Establish a regular evaluation mechanism for disposal effectiveness and continuously improve based on the evaluation results. Maintain attention to new technologies and regulations, update disposal approaches in a timely manner to adapt to changing environments.	6. The fixed assets management department shall make necessary modifications and optimizations to the process and standards of asset disposal based on the review and feedback results. 7. The fixed assets management department updates the disposal plan and considers introducing new technologies and methods to improve efficiency and transparency.

According to the summary results in Table 26, this result will be used to draft approaches for fixed assets management in universities. In "Disposal", we conclude that:

- 1) The fixed assets management department shall develop a clear asset disposal plan, specifying disposal objectives and principles.
- 2) The fixed assets management department determines the procedures and processes for asset disposal, including stages such as approval, evaluation, and auction.
- 3) The fixed assets management department shall form a professional team or entrust professional institutions to conduct asset evaluation and pricing.
- 4) The fixed assets management department shall establish a regular asset disposal audit mechanism to ensure that the asset disposal procedures comply with regulations and rules.

5) The fixed assets management department, audit department, and finance department simultaneously monitor the disposal process, collect feedback information after disposal, and evaluate the effectiveness of the disposal process. (C)

6) The fixed assets management department shall make necessary modifications and optimizations to the process and standards of asset disposal based on the review and feedback results.

7) The fixed assets management department updates the disposal plan and considers introducing new technologies and methods to improve efficiency and transparency.

3. Researcher have compiled a set of approaches for fixed assets management in 3 universities in Jiangxi Province, taking into account the current state, desired state, and summary of the above findings.

Table 27 Draft of Approaches for Fixed Assets Management of the Universities in Jiangxi Province

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Allocation	<ol style="list-style-type: none"> 1. University administrators clarify relevant regulations and policies to ensure that the configuration process complies with legal requirements. 2. University administrators establish and improve internal audit systems, conduct regular audits of fixed asset management processes, and ensure compliance. 3. University administrators determine the overall goals of configuration standards, including meeting requirements, improving efficiency, and reducing costs.

Table 27 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Allocation	<p>4. The fixed assets management department introduces digital technologies such as big data analysis and artificial intelligence to improve the scientificity and efficiency of configuration decision-making.</p> <p>5. The fixed assets management department considers environmental factors in allocation decisions and advocates for sustainable resource utilization.</p> <p>6. The fixed assets management department uses data analysis tools to monitor the configuration process to ensure transparency, regulatory compliance, and efficiency.</p> <p>7. The fixed assets management department shall establish and improve a fixed asset insurance system to prevent potential risks and safeguard the interests of the school.</p> <p>8. The fixed assets management department regularly evaluates the actual effectiveness of allocation decisions to ensure that the allocated assets meet the needs of the school.</p> <p>9. The fixed assets management department evaluates the cost and benefits of allocation decisions and optimizes allocation strategies.</p> <p>10. The fixed assets management department shall strengthen training and education to ensure that relevant personnel understand and comply with the problems discovered during the inspection process.</p> <p>11. The fixed assets management department regularly assesses fixed asset management personnel, with clear rewards and punishments, to improve work enthusiasm and sense of responsibility.</p>

Table 27 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Purchase	<ol style="list-style-type: none"> 1. University administrators clarify relevant regulations and policies to ensure that the procurement process complies with legal requirements. 2. The procurement department understands the procurement needs of various departments in universities, including teaching, scientific research, administration, and other aspects. 3. The procurement department sets the overall goal of procurement standards, including meeting the needs of each department, improving procurement efficiency, and reducing costs. 4. The procurement department introduces digital technologies such as big data analysis and electronic procurement platforms to improve the scientificity and efficiency of procurement decisions. 5. The procurement department establishes close cooperation with suppliers to ensure the synergy and flexibility of the supply chain. 6. The procurement department strengthens the professional training of procurement personnel, improves their business quality and legal awareness, to ensure the standardized operation of the procurement process. 7. The procurement department evaluates the cost and benefits of procurement decisions and optimizes procurement strategies. 8. The procurement department focuses on information disclosure during the procurement process, improves transparency, and facilitates the supervision and management of procurement activities by the public and relevant departments.

Table 27 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Purchase	<p>9. Procurement uses data analysis tools to monitor the procurement process to ensure transparency, regulatory compliance, and efficiency.</p> <p>10. The procurement department strengthens the identification and prevention of procurement risks, formulates targeted risk response measures, and ensures the safe and stable conduct of procurement activities.</p>
Registration	<p>1. The fixed assets management department shall determine the goals and scope of formulating fixed asset registration standards, and clarify the schedule of the plan.</p> <p>2. The fixed assets management department collects relevant regulations and policies to understand the legal requirements for registration and the actual needs of the school.</p> <p>3. The fixed assets management department formulates fixed asset registration standards, including registration data requirements, processes, and division of responsibilities.</p> <p>4. The fixed assets management department shall determine the specific operational steps for fixed asset registration, including the technical tools used, relevant training, etc.</p> <p>5. The fixed assets management department regularly inspects the implementation of fixed asset registration standards to ensure compliance with expected goals.</p> <p>6. The fixed assets management department conducts internal audits to evaluate the compliance and effectiveness of approaches, and collects feedback from users and relevant personnel.</p>

Table 27 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Registration	<p>7. The fixed assets management department shall take necessary measures to improve and perfect the fixed asset registration standards based on the results of the inspection stage.</p> <p>8. The fixed assets management department provides training and communication mechanisms to ensure the correct implementation of the approaches.</p>
Use	<p>1. University administrators determine the overall goals and strategies of the fixed assets usage approaches, clarify usage standards and related policies.</p> <p>2. The fixed assets management department shall develop a detailed usage plan, including standardized usage scenarios and usage cycles for various assets.</p> <p>3. The fixed assets management department shall establish responsible departments and personnel, implement usage approaches, and clarify the responsibilities of relevant parties.</p> <p>4. The fixed assets management department introduces digital technology, establishes an intelligent monitoring system, tracks asset usage in real-time, and improves management efficiency.</p> <p>5. The fixed assets management department provides training and education to ensure that employees understand and can operate fixed assets correctly, and promote standardized use.</p> <p>6. The fixed assets management department designs regular inspection and review mechanisms to evaluate the implementation of usage approaches, identify issues, and promptly correct them.</p>

Table 27 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Use	<p>7. The fixed assets management department introduces a user feedback mechanism to encourage employees to propose improvement suggestions and promote the continuous optimization of the approaches.</p> <p>8. The fixed assets management department promotes communication and collaboration among departments to ensure the sharing and rational utilization of assets.</p> <p>9. The fixed assets management department continuously optimizes the allocation of fixed assets, adjusts the asset structure according to actual needs, and improves the efficiency of asset utilization.</p>
Disposal	<p>1. The fixed assets management department shall develop a clear asset disposal plan, specifying disposal objectives and principles.</p> <p>2. The fixed assets management department determines the procedures and processes for asset disposal, including stages such as approval, evaluation, and auction.</p> <p>3. The fixed assets management department shall form a professional team or entrust professional institutions to conduct asset evaluation and pricing.</p> <p>4. The fixed assets management department shall establish a regular asset disposal audit mechanism to ensure that the asset disposal procedures comply with regulations and rules.</p> <p>5. The fixed assets management department, audit department, and finance department simultaneously monitor the disposal process, collect feedback information after disposal, and evaluate the effectiveness of the disposal process.</p>

Table 27 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Disposal	<p>6. The fixed assets management department shall make necessary modifications and optimizations to the process and standards of asset disposal based on the review and feedback results.</p> <p>7. The fixed assets management department updates the disposal plan and considers introducing new technologies and methods to improve efficiency and transparency.</p>

The researchers invited 5 experts to propose revision suggestions for the draft approaches on fixed assets management of universities in Jiangxi Province. These experts all hold doctoral degrees, professor titles and more than 5 years of experience in the field of education management. They are:

1) Prof. Dr. Liu Junzhuo, Director of the Information Center at Jingdezhen University, has devoted a significant portion of his career to educational management research. With over a decade of experience in information management, Dr. Liu has accumulated extensive expertise, demonstrating his capability in overseeing and advancing the university's information systems and technology infrastructure.

2) Prof. Dr. Xiang Zhongmin, Director of Equipment Management at Jiangxi Arts & Ceramics Technology Institute, has dedicated a significant part of his career to the field of educational management research. With more than a decade of experience specifically in fixed assets management, Dr. Xiang has developed a wealth of knowledge and expertise.

3) Prof. Dr. Hu Yongjun, Director of the Finance Department at Jingdezhen University, has dedicated a significant part of his career to educational

management research. With over a decade of experience in financial management, Dr. Hu brings a wealth of expertise and a deep understanding of financial strategies and practices to the institution.

4) Prof. Dr. Li Yingxi, Director of Asset Management at Jiangxi Arts & Ceramics Technology Institute, has a long-standing commitment to educational management research. With over a decade of experience in fixed assets management, Dr. Li brings valuable expertise and a wealth of management experience to the institution.

5) Prof. Dr. Si Chuncan, Dean of the Academic Affairs Office at Jingdezhen University, has dedicated himself to educational management research for a long time. With over a decade of engagement in teaching equipment management, he brings a wealth of experience and deep insights into the effective management of educational resources and facilities.

The expert suggestions for the draft approaches on fixed assets management of universities in Jiangxi Province are shown in the table below:

Table 28 Expert Interview Results of the Draft Approaches

Interview Points	Expert Feedback	Improvement Suggestions
Allocation	Clear (Reserved)	Reserved
Purchase	Clear (Reserved)	Reserved
Registration	Clear (Reserved)	Reserved
Use	Clear (Reserved)	Reserved
Disposal	Clear, but it is recommended to increase the development of green and environmentally friendly asset disposal strategies, prioritize the selection of environmentally friendly and renewable disposal methods, and reduce the negative impact on the environment.	Adjust according to expert advice.

In accordance with the improvement suggestions from experts, the researchers have revised the approaches for fixed assets management of universities in Jiangxi Province.

Table 29 Approaches for Fixed Assets Management of the Universities in Jiangxi Province

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Allocation	<ol style="list-style-type: none"> 1. University administrators clarify relevant regulations and policies to ensure that the configuration process complies with legal requirements. 2. University administrators establish and improve internal audit systems, conduct regular audits of fixed asset management processes, and ensure compliance. 3. University administrators determine the overall goals of configuration standards, including meeting requirements, improving efficiency, and reducing costs. 4. The fixed assets management department introduces digital technologies such as big data analysis and artificial intelligence to improve the scientificity and efficiency of configuration decision-making. 5. The fixed assets management department considers environmental factors in allocation decisions and advocates for sustainable resource utilization. 6. The fixed assets management department uses data analysis tools to monitor the configuration process to ensure transparency, regulatory compliance, and efficiency. 7. The fixed assets management department shall establish and improve a fixed asset insurance system to prevent potential risks and safeguard the interests of the school.

Table 29 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Allocation	<p>8. The fixed assets management department regularly evaluates the actual effectiveness of allocation decisions to ensure that the allocated assets meet the needs of the school.</p> <p>9. The fixed assets management department evaluates the cost and benefits of allocation decisions and optimizes allocation strategies.</p> <p>10. The fixed assets management department shall strengthen training and education to ensure that relevant personnel understand and comply with the problems discovered during the inspection process.</p> <p>11. The fixed assets management department regularly assesses fixed asset management personnel, with clear rewards and punishments, to improve work enthusiasm and sense of responsibility.</p>
Purchase	<p>1. University administrators clarify relevant regulations and policies to ensure that the procurement process complies with legal requirements.</p> <p>2. The procurement department understands the procurement needs of various departments in universities, including teaching, scientific research, administration, and other aspects.</p> <p>3. The procurement department sets the overall goal of procurement standards, including meeting the needs of each department, improving procurement efficiency, and reducing costs.</p> <p>4. The procurement department introduces digital technologies such as big data analysis and electronic procurement platforms to improve the scientificity and efficiency of procurement decisions.</p>

Table 29 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Purchase	<p>5. The procurement department establishes close cooperation with suppliers to ensure the synergy and flexibility of the supply chain.</p> <p>6. The procurement department strengthens the professional training of procurement personnel, improves their business quality and legal awareness, to ensure the standardized operation of the procurement process.</p> <p>7. The procurement department evaluates the cost and benefits of procurement decisions and optimizes procurement strategies.</p> <p>8. The procurement department focuses on information disclosure during the procurement process, improves transparency, and facilitates the supervision and management of procurement activities by the public and relevant departments.</p> <p>9. Procurement uses data analysis tools to monitor the procurement process to ensure transparency, regulatory compliance, and efficiency.</p> <p>10. The procurement department strengthens the identification and prevention of procurement risks, formulates targeted risk response measures, and ensures the safe and stable conduct of procurement activities.</p>
Registration	<p>1. The fixed assets management department shall determine the goals and scope of formulating fixed asset registration standards, and clarify the schedule of the plan.</p> <p>2. The fixed assets management department collects relevant regulations and policies to understand the legal requirements for registration and the actual needs of the school.</p>

Table 29 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Registration	<p>3.The fixed assets management department formulates fixed asset registration standards, including registration data requirements, processes, and division of responsibilities.</p> <p>4.The fixed assets management department shall determine the specific operational steps for fixed asset registration, including the technical tools used, relevant training, etc.</p> <p>5. The fixed assets management department regularly inspects the implementation of fixed asset registration standards to ensure compliance with expected goals.</p> <p>6. The fixed assets management department conducts internal audits to evaluate the compliance and effectiveness of approaches, and collects feedback from users and relevant personnel.</p> <p>7. The fixed assets management department shall take necessary measures to improve and perfect the fixed asset registration standards based on the results of the inspection stage.</p> <p>8. The fixed assets management department provides training and communication mechanisms to ensure the correct implementation of the approaches.</p>
Use	<p>1. University administrators determine the overall goals and strategies of the fixed assets usage approaches, clarify usage standards and related policies.</p> <p>2. The fixed assets management department shall develop a detailed usage plan, including standardized usage scenarios and usage cycles for various assets.</p>

Table 29 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Use	<p>3. The fixed assets management department shall establish responsible departments and personnel, implement usage approaches, and clarify the responsibilities of relevant parties.</p> <p>4. The fixed assets management department introduces digital technology, establishes an intelligent monitoring system, tracks asset usage in real-time, and improves management efficiency.</p> <p>5. The fixed assets management department provides training and education to ensure that employees understand and can operate fixed assets correctly, and promote standardized use.</p> <p>6. The fixed assets management department designs regular inspection and review mechanisms to evaluate the implementation of usage approaches, identify issues, and promptly correct them.</p> <p>7. The fixed assets management department introduces a user feedback mechanism to encourage employees to propose improvement suggestions and promote the continuous optimization of the approaches.</p> <p>8. The fixed assets management department promotes communication and collaboration among departments to ensure the sharing and rational utilization of assets.</p> <p>9. The fixed assets management department continuously optimizes the allocation of fixed assets, adjusts the asset structure according to actual needs, and improves the efficiency of asset utilization.</p>

Table 29 (Continued)

Components	Approaches to Enhance Fixed Assets Management of Universities in Jiangxi Province
Disposal	<ol style="list-style-type: none"> 1. The fixed assets management department shall develop a clear asset disposal plan, specifying disposal objectives and principles. 2. The fixed assets management department determines the procedures and processes for asset disposal, including stages such as approval, evaluation, and auction. 3. The fixed assets management department shall form a professional team or entrust professional institutions to conduct asset evaluation and pricing. 4. The fixed assets management department shall establish a regular asset disposal audit mechanism to ensure that the asset disposal procedures comply with regulations and rules. 5. The fixed assets management department, audit department, and finance department simultaneously monitor the disposal process, collect feedback information after disposal, and evaluate the effectiveness of the disposal process. 6. The fixed assets management department shall make necessary modifications and optimizations to the process and standards of asset disposal based on the review and feedback results. 7. The fixed assets management department updates the disposal plan and considers introducing new technologies and methods to improve efficiency and transparency. 8. The fixed assets management department has established a green and environmentally friendly asset disposal strategy, prioritizing environmentally friendly and renewable energy disposal methods, and reducing negative impacts on the environment.

Additionally, 5 experts have confirmed the suitability, utility, and feasibility of the fixed assets management approaches of universities in Jiangxi Province.

Table 30 The Appropriately, Utility, and Feasibility of the Fixed Assets Management Approaches of Universities in Jiangxi Province

Evaluation items	Appropriately			Utility			Feasibility		
	X	S.D.	Result	X	S.D.	Result	X	S.D.	Result
1.Allocation									
1.1University administrators clarify relevant regulations and policies to ensure that the configuration process complies with legal requirements.	4.80	.447	Very High	4.80	.447	Very High	4.60	.548	Very High
1.2University administrators establish and improve internal audit systems, conduct regular audits of fixed asset management processes, and ensure compliance.	5.00	.000	Very High	4.80	.447	Very High	4.80	.447	Very High
1.3University administrators determine the overall goals of configuration standards, including meeting requirements, improving efficiency, and reducing costs.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1.Allocation									
1.4The fixed assets management department introduces digital technologies such as big data analysis and artificial intelligence to improve the scientificity and efficiency of configuration decision-making.	5.00	.000	Very High	4.80	.447	Very High	4.80	.447	Very High
1.5The fixed assets management department considers environmental factors in allocation decisions and advocates for sustainable resource utilization.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High
1.6The fixed assets management department uses data analysis tools to monitor the configuration process to ensure transparency, regulatory compliance, and efficiency.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
1.Allocation									
1.7The fixed assets management department shall establish and improve a fixed asset insurance system to prevent potential risks and safeguard the interests of the school.	4.80	.447	Very High	4.80	.447	Very High	4.60	.548	Very High
1.8The fixed assets management department regularly evaluates the actual effectiveness of allocation decisions to ensure that the allocated assets meet the needs of the school.	4.60	.548	Very High	4.80	.447	Very High	4.80	.447	Very High
1.9The fixed assets management department evaluates the cost and benefits of allocation decisions and optimizes allocation strategies.	4.80	.447	Very High	4.80	.447	Very High	4.60	.548	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	X	S.D.	Result	X	S.D.	Result	X	S.D.	Result
1.Allocation									
1.10The fixed assets management department shall strengthen training and education to ensure that relevant personnel understand and comply with the problems discovered during the inspection process.	4.60	.548	Very High	4.80	.447	Very High	4.80	.447	Very High
1.11The fixed assets management department regularly assesses fixed asset management personnel, with clear rewards and punishments, to improve work enthusiasm and sense of responsibility.	4.80	.447	Very High	4.80	.447	Very High	4.60	.548	Very High

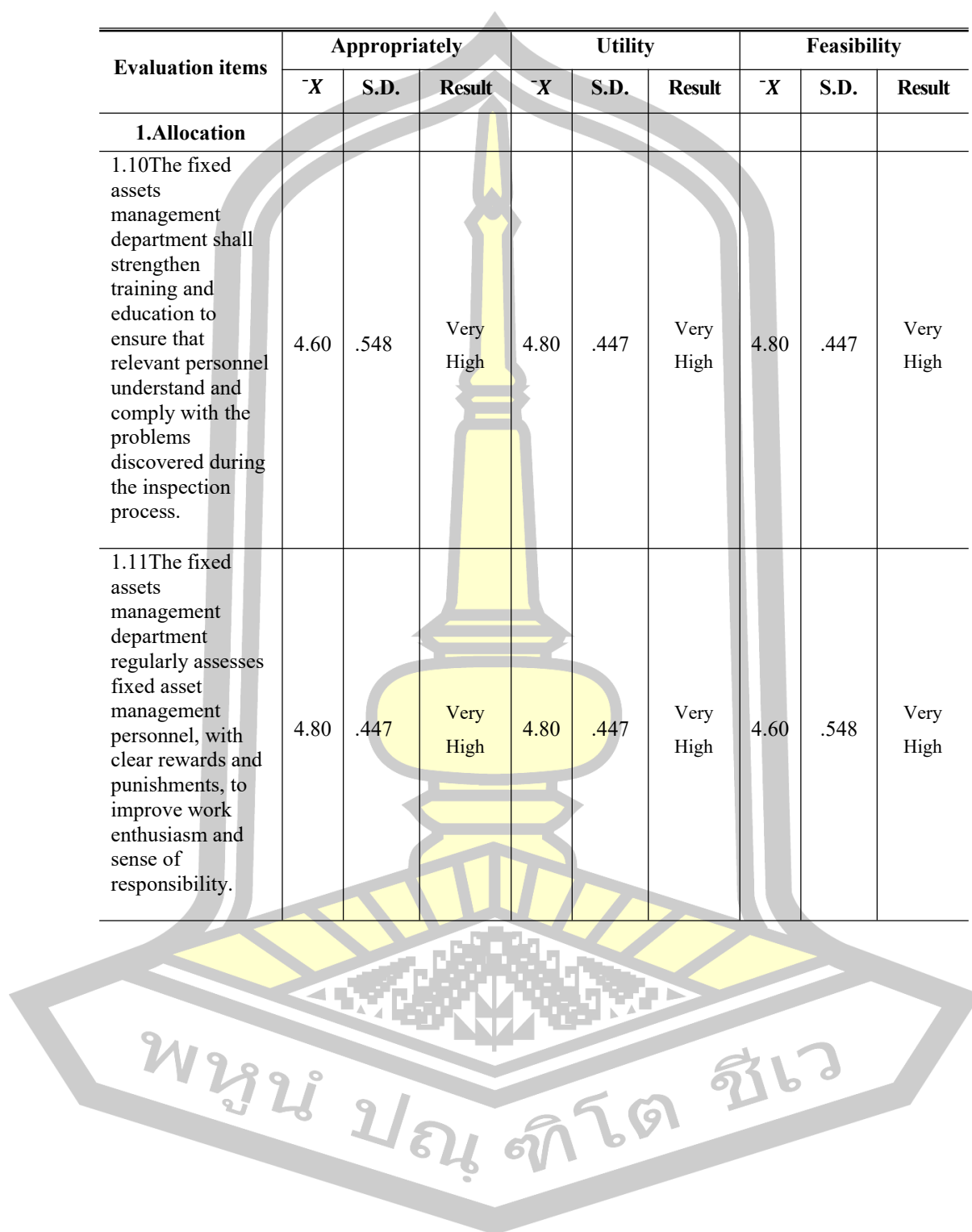


Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
2.Purchase									
2.1University administrators clarify relevant regulations and policies to ensure that the procurement process complies with legal requirements.	4.80	.447	Very High	4.60	.548	Very High	5.00	.000	Very High
2.2The procurement department understands the procurement needs of various departments in universities, including teaching, scientific research, administration, and other aspects.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
2.3The procurement department sets the overall goal of procurement standards, including meeting the needs of each department, improving procurement efficiency, and reducing costs.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	X	S.D.	Result	X	S.D.	Result	X	S.D.	Result
2.Purchase									
2.4The procurement department introduces digital technologies such as big data analysis and electronic procurement platforms to improve the scientificity and efficiency of procurement decisions.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
2.5The procurement department establishes close cooperation with suppliers to ensure the synergy and flexibility of the supply chain.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
2.6The procurement department strengthens the professional training of procurement personnel, improves their business quality and legal awareness, to ensure the standardized operation of the procurement process.	4.80	.447	Very High	4.80	.447	Very High	4.60	.548	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
2.Purchase									
2.7The procurement department evaluates the cost and benefits of procurement decisions and optimizes procurement strategies.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High
2.8The procurement department focuses on information disclosure during the procurement process, improves transparency, and facilitates the supervision and management of procurement activities by the public and relevant departments.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High
2.9Procurement uses data analysis tools to monitor the procurement process to ensure transparency, regulatory compliance, and efficiency.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	X	S.D.	Result	X	S.D.	Result	X	S.D.	Result
2.Purchase									
2.10The procurement department strengthens the identification and prevention of procurement risks, formulates targeted risk response measures, and ensures the safe and stable conduct of procurement activities.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High
3.Registration									
3.1The fixed assets management department shall determine the goals and scope of formulating fixed asset registration standards, and clarify the schedule of the plan.	4.80	.447	Very High	5.00	.000	Very High	4.80	.447	Very High
3.2The fixed assets management department collects relevant regulations and policies to understand the legal requirements for registration and the actual needs of the school.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
3.Registration									
3.3The fixed assets management department formulates fixed asset registration standards, including registration data requirements, processes, and division of responsibilities.	4.60	.548	Very High	5.00	.000	Very High	4.80	.447	Very High
3.4The fixed assets management department shall determine the specific operational steps for fixed asset registration, including the technical tools used, relevant training, etc.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
3.5The fixed assets management department regularly inspects the implementation of fixed asset registration standards to ensure compliance with expected goals.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
3.Registration									
3.6The fixed assets management department conducts internal audits to evaluate the compliance and effectiveness of approaches, and collects feedback from users and relevant personnel.	5.00	.000	Very High	4.80	.447	Very High	4.80	.447	Very High
3.7The fixed assets management department shall take necessary measures to improve and perfect the fixed asset registration standards based on the results of the inspection stage.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High
3.8The fixed assets management department provides training and communication mechanisms to ensure the correct implementation of the approaches.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
4.Use									
4.1University administrators determine the overall goals and strategies of the fixed assets usage approaches, clarify usage standards and related policies.	4.80	.447	Very High	4.80	.447	Very High	4.60	.548	Very High
4.2The fixed assets management department shall develop a detailed usage plan, including standardized usage scenarios and usage cycles for various assets.	5.00	.000	Very High	4.80	.447	Very High	4.80	.447	Very High
4.3The fixed assets management department shall establish responsible departments and personnel, implement usage approaches, and clarify the responsibilities of relevant parties.	4.60	.548	Very High	4.60	.548	Very High	4.80	.447	Very High
4.4The fixed assets management department introduces digital technology, establishes an intelligent monitoring system, tracks asset usage in real-time, and improves management efficiency.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
4.Use									
4.5The fixed assets management department provides training and education to ensure that employees understand and can operate fixed assets correctly, and promote standardized use.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
4.6The fixed assets management department designs regular inspection and review mechanisms to evaluate the implementation of usage approaches, identify issues, and promptly correct them.	4.60	.548	Very High	4.80	.447	Very High	4.80	.447	Very High
4.7The fixed assets management department introduces a user feedback mechanism to encourage employees to propose improvement suggestions and promote the continuous optimization of the approaches.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
4.Use									
4.8The fixed assets management department promotes communication and collaboration among departments to ensure the sharing and rational utilization of assets.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
4.9The fixed assets management department continuously optimizes the allocation of fixed assets, adjusts the asset structure according to actual needs, and improves the efficiency of asset utilization.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
5.Disposal			Very High			Very High			Very High
5.1The fixed assets management department shall develop a clear asset disposal plan, specifying disposal objectives and principles.	4.80	.447	Very High	4.60	.548	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	X	S.D.	Result	X	S.D.	Result	X	S.D.	Result
5.Disposal									
5.2The fixed assets management department determines the procedures and processes for asset disposal, including stages such as approval, evaluation, and auction.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
5.3The fixed assets management department shall form a professional team or entrust professional institutions to conduct asset evaluation and pricing.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
5.4The fixed assets management department shall establish a regular asset disposal audit mechanism to ensure that the asset disposal procedures comply with regulations and rules.	4.80	.447	Very High	5.00	.000	Very High	4.80	.447	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	X	S.D.	Result	X	S.D.	Result	X	S.D.	Result
5.Disposal									
5.5The fixed assets management department, audit department, and finance department simultaneously monitor the disposal process, collect feedback information after disposal, and evaluate the effectiveness of the disposal process.	4.80	.447	Very High	4.80	.447	Very High	5.00	.000	Very High
5.6The fixed assets management department shall make necessary modifications and optimizations to the process and standards of asset disposal based on the review and feedback results.	4.80	.447	Very High	4.80	.447	Very High	4.80	.447	Very High
5.7The fixed assets management department updates the disposal plan and considers introducing new technologies and methods to improve efficiency and transparency.	4.80	.447	Very High	4.60	.548	Very High	5.00	.000	Very High

Table 30 (Continued)

Evaluation items	Appropriately			Utility			Feasibility		
	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result	\bar{X}	S.D.	Result
5.Disposal									
5.8The fixed assets management department has established a green and environmentally friendly asset disposal strategy, prioritizing environmentally friendly and renewable energy disposal methods, and reducing negative impacts on the environment.	4.80	.447	Very High	4.80	.447	Very High	5.00	.000	Very High
Total	4.81	.142	Very High	4.79	.123	Very High	4.80	.128	Very High

The comprehensive evaluation by 5 experts has verified the strong consensus on the suitability, utility, and feasibility of the approaches in managing fixed assets within universities in Jiangxi Province. Each domain—allocation, purchase, registration, use, and disposal—received high marks across all evaluation items, indicating a robust agreement on the effectiveness of current practices and the integration of technological advancements. Here's a summary of the findings:

1) Allocation: University administrators and the fixed assets management department have been recognized for ensuring that the allocation process adheres to legal requirements, optimizing the decision-making process through digital technologies, and considering environmental impacts in allocation decisions. The emphasis on transparency, efficiency, and compliance, along with the introduction of

data analysis tools and insurance systems, highlights a forward-thinking approach to asset allocation.

2) Purchase: The procurement process has been lauded for its compliance with regulations and its responsiveness to the diverse needs of university departments. The incorporation of digital platforms and close cooperation with suppliers underscores an efficient and scientifically grounded procurement strategy. Furthermore, the focus on professional training for procurement personnel and risk management illustrates a comprehensive approach to procurement that prioritizes quality, efficiency, and security.

3) Registration: Efforts to streamline the registration of fixed assets through the establishment of clear standards, operational steps, and regular inspections have been strongly endorsed. The utilization of internal audits and training programs ensures that the registration process is both effective and compliant with expected goals.

4) Use: The management of fixed assets usage benefits from detailed planning, the introduction of intelligent monitoring systems, and regular reviews. These measures, combined with training and user feedback mechanisms, foster a culture of responsible asset use and continuous improvement.

5) Disposal: The development of clear disposal plans, procedures, and professional evaluation teams, as well as regular audits and feedback mechanisms, has been recognized for ensuring that disposal activities are conducted responsibly and transparently. The commitment to environmentally friendly disposal methods further reflects the universities' dedication to sustainability.

Overall, the strong agreement across all evaluation items confirms that universities in Jiangxi Province are taking a holistic and technologically sophisticated approach to fixed assets management. This approach not only meets current needs but also sets a solid foundation for future advancements and sustainable practices.

CHAPTER V

CONCLUSION

This research, aimed at developing approaches for fixed assets management of the universities in Jiangxi Province, has yielded the following findings:

1. Research objectives
2. Research results
3. Discussion of the results
4. Conclusion and Recommendations

Research Objectives

The primary objective of this research is to develop approaches for fixed assets management of the universities in Jiangxi Province. This research is dedicated to:

- 1.To investigate components and indicators of fixed assets management of the universities in Jiangxi Province.
- 2.To explore the current state, desired state and priority demand of the fixed assets management of the universities in Jiangxi Province.
- 3.To develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province.

Research Results

Phase 1: The results of investigate components and indicators of fixed assets management of the universities in Jiangxi Province

In the expert checklist, experts employed a five-level scale to assess the components and their respective indicators within fixed assets management. The

outcomes reveal that the levels of suitability, accuracy, and feasibility for each component and indicators are notably high. Consequently, it is determined that all components and indicators are highly appropriate for application in the management of fixed assets.

Phase 2: The results of explore the current state, desired state and priority demand of the fixed assets management of the universities in Jiangxi Province

The research findings of the researchers are as follows:

The survey of fixed assets management components across universities in Jiangxi Province reveals a significant gap between the current state and the desired state of fixed assets management, highlighting an urgent need for improvement and optimization. The current state is generally assessed as moderate across various components including allocation, purchase, registration, use, and disposal of fixed assets. However, the desired state for all these components is very high, indicating a strong demand for enhanced efficiency, effectiveness, and compliance in managing fixed assets. The priority demand index, calculated based on the discrepancy between the current and desired states, underscores allocation as the top priority, followed closely by purchase and use, with registration and disposal also being significant but slightly less urgent. This prioritization guides the focus for developing targeted approaches to elevate the management of fixed assets to meet the universities' strategic goals and operational needs. The demand for improved fixed assets management, based on the analysis, is prioritized as follows: (1) Allocation; (2) Purchase; (3) Use; (4) Registration; (5) Disposal.

Phase 3: Develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province

The fixed assets management approaches for universities in Jiangxi Province cover 5 components: 1) Allocation; 2) Purchase; 3) Registration; 4) Use; 5) Disposal. These areas are detailed into 46 specific management approaches. The mean

scores—suitability at 4.81, utility at 4.79, and feasibility at 4.80—demonstrate strong consensus among experts on the use of these approaches. When ranked by the Modified Priority Need Index (PNImod), the approaches are prioritized to address the most urgent needs in fixed assets management, ensuring that universities can manage their assets more effectively and in accordance with best management practices.

1) In terms of Allocation. It's essential to comply with applicable regulations and policies to ensure legality in the asset allocation process. Establishing clear objectives for allocation standards that aim at fulfilling specific needs, enhancing efficiency, and minimizing costs is vital. The integration of digital technologies such as big data analytics and artificial intelligence is key to improving the scientific precision and efficiency of allocation decision-making processes. Environmental considerations should be incorporated into allocation decisions, promoting sustainable resource use and responsible asset management. Utilizing data analysis tools for continuous monitoring of the allocation process ensures transparency, regulatory compliance, and operational efficiency. Regular assessments of the actual effectiveness of allocation decisions ensure that the allocated assets meet the university's evolving needs. A thorough evaluation of the costs and benefits associated with allocation decisions leads to the optimization of allocation strategies. Moreover, a strong emphasis on training and education enhances the understanding and adherence of relevant personnel to findings identified during inspections, ensuring an effective, compliant, and progressive fixed asset allocation process within universities.

2) In terms of Purchase. it's vital to clearly outline relevant regulations and policies to guarantee compliance with legal standards. Understanding the procurement needs of different departments, including teaching, scientific research, and administration, is fundamental. Setting overarching goals for procurement standards to meet departmental needs, enhance procurement efficiency, and reduce

expenditures is crucial. The adoption of digital technologies, such as big data analysis and electronic procurement platforms, aims to improve the scientific accuracy and efficiency of procurement decisions. Fostering strong collaborations with suppliers enhances supply chain synergy and adaptability. Effective communication of procurement approaches to all involved parties ensures comprehension and adherence to these procedures. Utilizing data analytics to oversee the procurement process enhances transparency, regulatory compliance, and operational efficiency. A critical review of the costs and benefits associated with procurement decisions facilitates the optimization of procurement strategies. This holistic strategy ensures the procurement process for the university's fixed assets is both legally compliant and operationally efficient.

3) In terms of Use. Establishing clear overall objectives and strategies for fixed assets use approaches, including defining usage standards and policies, is essential. Developing detailed plans for the use of assets, involving standardized scenarios and durations for different types of assets, is necessary. Setting up departments with specific personnel responsible for enforcing use approaches, clarifying roles and responsibilities, is crucial. Incorporating digital technology to introduce intelligent monitoring systems enables real-time tracking of asset usage, thus improving management efficiency. It's important to provide training and education to ensure staff understand and can properly utilize fixed assets, fostering standardized usage. Designing regular inspection and review mechanisms to evaluate the adherence to use approaches helps identify and swiftly rectify issues.

Implementing a feedback mechanism from users encourages suggestions for improvements, promoting continuous optimization of approaches. Facilitating communication and collaboration among departments ensures assets are shared and used rationally, enhancing the effective management of fixed assets within universities.

4) In terms of Registration. It is essential to establish the objectives and scope of fixed assets registration standards, including a precise schedule. Gathering relevant regulations and policies is critical to ensure alignment with legal requirements and the university's specific needs. The formulation of these standards involves specifying the requirements for registration data, detailing processes, and defining roles and responsibilities. Implementing specific operational steps for asset registration, which include employing technical tools and providing necessary training, is also crucial. Regular inspections to verify the implementation of these standards help to ensure alignment with the set objectives. Internal audits assess the compliance and effectiveness of the approaches, collecting feedback from users and relevant personnel. Necessary improvements to the fixed assets registration standards are made based on inspection results, addressing any deficiencies and updating procedures as needed. Additionally, establishing training and communication protocols ensures the accurate application of these approaches. This detailed method aims to boost the efficiency and adherence of fixed assets registration within the university framework, supporting the institution's sustainable development goals.

5) In terms of Disposal. The management of fixed assets disposal within universities necessitates a structured approach that includes formulating a transparent plan detailing disposal goals and guiding principles. It is crucial to specify the procedures and processes for disposal, encompassing stages such as approval, evaluation, and auction, to ensure a thorough and accountable process. The engagement of a specialized team or the outsourcing to professional entities for the evaluation and pricing of assets is critical to guarantee fairness and accuracy. The introduction of a consistent asset disposal audit mechanism helps in upholding compliance with relevant regulations and standards throughout the disposal operations. Real-time monitoring of the disposal process, coupled with the collection and analysis of post-disposal feedback, facilitates the continuous refinement of the disposal

strategy. Necessary adjustments and enhancements are made based on the outcomes of reviews and feedback, aiming for an optimized and standardized disposal methodology. Regular updates to the disposal plan, with an emphasis on incorporating advanced technologies and methodologies, enhance efficiency and transparency. Adopting eco-friendly and sustainable disposal strategies aligns with environmental conservation efforts, underscoring the commitment to minimizing the ecological impact of disposal activities. This comprehensive and environmentally conscious approach ensures the effective and responsible management of fixed assets disposal, aligning with the sustainability goals of universities.

Discussion

1.To investigate components and indicators of fixed assets management of the universities in Jiangxi Province

1) Allocation of fixed assets

Synthesizing the indicators of allocation from various academics, the researcher concluded that there are 3 indicators: (1) Allocation standards, (2) Establishing system, (3) Approval process.

Research indicates that the aforementioned results align with the findings of Zhang, F. (2022), and Varun, T. & Suseendran, G. (2021). Zhang, F. (2022) described the allocation of fixed assets as covering an organic whole, including various asset allocation standards and a standard implementation guarantee mechanism. Varun, T. & Suseendran, G. (2021) indicated that the imperfect internal resource management mechanism of universities, the contradictions of weak concept of resource management, ineffective management measures.

2) Purchase of fixed assets

Synthesizing the indicators of purchase from various academics, the researcher concludes that there are 2 indicators: (1) Agreement procurement, (2) Government procurement.

Research indicates that the aforementioned results align with the findings of Yu, H. (2022), and Wu, J. (2011). Yu, H. (2022) emphasized that government procurement, being a significant component of government financial expenditures, directly influences the efficiency of financial resource utilization. Wu, J. (2011) described that with the evolution of China's education system and the expansion of university sizes, the procurement approach for fixed assets in universities has shifted from traditional agreement-based procurement to government procurement.

3) Registration of fixed assets

Synthesizing the indicators of registration from various academics, the researcher concludes that there are 3 indicators: (1) Fixed assets acceptance, (2) Fixed assets inventory, and (3) Establishment of fixed assets ledger.

Research indicates that the aforementioned results align with the findings of Shu, H. (2022), and MOF (2020). Shu, H. (2022) described that through the asset registration management system, asset information becomes transparent and easy to query. The system includes a module for responsible classification to expedite the inventory process. MOF (2020) indicated that to fully grasp information on the quantity, value, and usage status of fixed assets, universities strictly control the acceptance of fixed assets, regularly conduct inventory checks of fixed assets, and promptly update fixed asset information.

4) Use of fixed assets

Synthesizing the indicators of use from various academics, the researcher concludes that there are 4 indicators: (1) General fixed assets use, (2) Special fixed assets use, (3) Fixed assets transfer, and (4) Fixed assets leasing.

Research indicates that the aforementioned results align with the findings of MOF (2022), and Zhang, H. (2017). MOF (2022) indicated that the general requirements for the use and management of fixed assets in schools are: clear ownership, safety and integrity, tracking management, focus on performance, ensuring the normal operation of schools and meeting business development needs, achieving full utilization of fixed assets, maximizing the effectiveness of asset use, and strictly implementing norms for the use of fixed assets. Zhang, H. (2017) pointed out that teaching and research personnel should be encouraged to make full use of fixed assets, especially large instruments and laboratory resources. Through the sharing mechanism, promote the flow and sharing of assets between different disciplines and teams, and improve the efficiency of asset use.

5) Disposal of fixed assets

Synthesizing the indicators of disposal from various academics, the researcher concludes that there are 2 indicators: (1) Disposal scope, (2) Disposal methods and procedures.

Research indicates that the aforementioned results align with the findings of Guo, J. (2022), and Liu, J., Lang, L., & Qian, C. (2020). Guo, J. (2022) described disposal of fixed assets in universities as a fundamental measure to prevent the loss of state-owned assets, optimize asset utilization, and facilitate the smooth development of various initiatives in universities. Liu, J., Lang, L., & Qian, C. (2020) pointed out that refining the asset classification system and standardizing the asset disposal process can help university decision-makers better understand the capital investment in teaching, scientific research, management, and other facilities. This, in turn, can improve the accuracy of decision-making.

2.To explore the current state, desired state and priority demand of the fixed assets management of the universities in Jiangxi Province

The current state of fixed assets management in 3 universities is rated as moderate, while the desired state is ranked very high across all areas of management. When priorities are considered, staff involved in fixed assets management, both full-time and part-time, across these universities have identified a hierarchy of needs for improving fixed assets management, listed in order of descending importance: (1) Allocation; (2) Purchase; (3) Use; (4) Registration; (5) Disposal. These priorities highlight critical areas for enhancement in the management of fixed assets within universities. This observation aligns with the findings of Wang G., and Chen G. (2021), indicating a widespread consensus on the key aspects that influence the effective management of fixed assets in academic institutions. Leveraging the provincial assessment and evaluation of assets as an opportunity, universities in the province are addressing key issues in fixed assets management, including mismatches in asset allocation systems, inefficiencies in asset registration, and challenges in asset usage. A comprehensive set of measures has been introduced to tackle these problems, including the development and enhancement of management systems, the advancement of management teams, the strengthening of asset allocation and budget management, the improvement of asset inventory efficiency, the establishment of an asset sharing platform, and the elevation of information management levels. These initiatives aim to explore an innovative model for university asset management, focusing on standardizing practices and fostering development. The research conducted by Chu, X., and Liu, N. (2022) aligns with these findings, emphasizing a similar approach to enhancing the efficiency and standardization of asset management in higher education institutions. This study explores the comprehensive management of fixed assets encompassing procurement,

utilization, and disposal within higher education institutions, aiming to augment both efficiency and standardization of asset management. It initiates with the formulation of a logical procurement strategy, which integrates a digitized procurement system and optimizes supply chain coordination based on extensive market research and thorough supplier evaluation for fixed assets procurement. Furthermore, it enhances the compliant and effective utilization of assets by defining clear criteria for fixed assets use, deploying intelligent monitoring systems, and executing comprehensive employee training programs. Conclusively, it sets forth a meticulous disposal procedure for fixed assets that leverages digital technology to boost efficiency while prioritizing environmental protection and sustainable development principles, thereby refining the overall asset management framework in higher education settings.

3.To develop and evaluate approaches to enhance fixed assets management of universities in Jiangxi Province

The approaches for fixed assets management of the universities in Jiangxi Province have been evaluated as appropriate, practical, and feasible, with mean values indicating strong agreement among experts: suitability at 4.81, practicality at 4.79, and feasibility at 4.80. This indicates a consensus on the effectiveness of these approaches to guide the practices of fixed assets managers and staff within the university context. In-depth analysis of fixed assets management, encompassing its current state, desired state, and priority needs, lays the groundwork for enhancing management practices. The comprehensive management of fixed assets encompasses 5 key components, prioritized according to demand: 1) Allocation, 2) Purchase, 3) Use, 4) Registration, and 5) Disposal. This structured approach is instrumental in improving the management and utilization of fixed assets across universities in the province. The findings of Li, J., and Han, X. (2020) highlight several areas for improvement in fixed assets management, taking Shandong Yingcai

College as an example. Key recommendations include adopting a centralized approach for the disposal of fixed assets to streamline and regularize the process, focusing on comprehensive training for new employees on asset management regulations and responsibilities, and improving systems for asset management leaders by clearly defining their roles and establishing assessment criteria. Additionally, the asset management performance evaluation system should aim to enhance asset utilization efficiency by considering all aspects of assets throughout their lifecycle. Lastly, the establishment of an internal control supervision system for asset management is advised to ensure compliance with regulations and adherence to business norms, thereby strengthening the supervision mechanism. The insights provided by Shu, H. (2022) highlight the importance of fine-grained management in the disposal of fixed assets within universities, underscoring its crucial role in the broader context of fixed assets management. The delegation of disposal authority to universities by local financial departments is recommended to enable more effective and autonomous management. Additionally, universities are encouraged to go beyond rigid existing systems and establish detailed disposal rules that can increase efficiency and optimize the residual value of assets. This approach not only ensures the sustainability of asset management but also facilitates the procurement and utilization of the new assets, thereby promoting a virtuous cycle in the management of fixed assets within university settings.

In summary, the fixed assets management of the universities in Jiangxi Province is structured around 5 components: 1) Allocation; 2) Purchase; 3) Registration; 4) Use; and (5) Disposal. To ensure comprehensive and effective management, universities should craft detailed plans that cater to the requirements of all stakeholders involved in fixed assets management, including personnel responsible for managing these assets, both on a full-time and part-time basis. In formulating these strategies, it's imperative to heed existing regulations and ensure adherence to

policies, leverage cutting-edge technologies and methodologies to boost management efficiency and transparency, and enhance inter-departmental communication and cooperation to foster a unified management framework. This multifaceted approach promises to advance the standard of fixed assets management across universities, facilitating optimal asset distribution and promoting their efficient use.

Conclusion and Recommendations

From this research, several conclusions can be drawn to determine an appropriate approach for managing fixed assets in universities in Jiangxi Province.

1. Introducing advanced digital technologies, including artificial intelligence and machine learning, to establish data analytics and intelligent decision support systems enhances the scientific accuracy and efficiency of asset configuration decisions. It is essential to ensure the system can monitor and analyze asset configuration situations in real-time. Furthermore, advocating for the application of blockchain technology can enhance the security and transparency of configuration information.

2. Advocating for a comprehensive life cycle assessment approach that encompasses not only acquisition costs but also operational and maintenance costs throughout the asset's lifespan. This method aims to optimize asset allocation fully, ensuring a holistic consideration of costs. Furthermore, it involves introducing environmental and social factors into asset allocation strategies to promote sustainable development.

3. Establishing a Supply Chain Collaborative Optimization Center, which utilizes advanced supply chain technologies to foster closer collaboration with suppliers. This center aims to ensure efficient coordination within the supply chain, enhancing procurement efficiency, and reducing overall costs through the sharing of

information and resources. Additionally, it promotes traceability and sustainability in supply chain management.

4.Utilizing big data analytics to formulate data-driven procurement decisions, including precision forecasting of demand, optimizing procurement plans, and emphasizing compliance reviews of procurement contracts to ensure adherence to regulations and policies. Advocating for the adoption of blockchain technology to enhance transparency and credibility in the procurement process.

5.Deploying an intelligent registration system integrating RFID, barcode, and other technologies enhances the accuracy of asset registration. Providing mobile terminal applications allows employees to use smart devices for asset registration, promoting real-time information updates and data accuracy. Advocating for digital identity recognition technology adoption enhances the registration system's security.

6.Conducting regular audits of asset registration ensures alignment between system information and actual assets. Through periodic audit processes, registration accuracy and system reliability are enhanced. The introduction of audit technologies strengthens registration data audits, ensuring data consistency and integrity.

7.Developing a comprehensive training plan incorporates diverse methods, including face-to-face, online, and virtual reality (VR) training, aimed at enhancing employees' understanding and operational skills in fixed assets usage. This ensures proficiency in relevant processes. The introduction of virtual reality (VR) and augmented reality (AR) technologies enhances the training experience.

8.Introducing an Internet of Things (IoT) monitoring system enables real-time tracking of asset usage, utilizing predictive maintenance to maximize asset utilization and ensure equipment is always in optimal condition. Security and privacy

protection are emphasized to ensure compliance with relevant regulations and standards.

9. Developing a green disposal process emphasizes prioritizing environmentally friendly and renewable disposal methods, minimizing the environmental impact and reflecting the organization's commitment to social responsibility and sustainable development. It also promotes the principles of a circular economy to encourage the reuse and recycling of discarded assets, aligning with efforts to conserve resources and reduce waste.

10. Establishing a regular asset disposal review process is vital for ensuring compliance with regulatory requirements and mitigating legal risks. Regular reviews guarantee transparency and adherence to regulations throughout the disposal process. The introduction of audit technologies further underscores the importance of data integrity and credibility, providing a robust framework to verify compliance and enhance trust in the disposal procedures.

Future research in the realm of fixed assets management in universities could explore a variety of pivotal areas to enhance understanding and improve practices. Here are some suggestions for future studies:

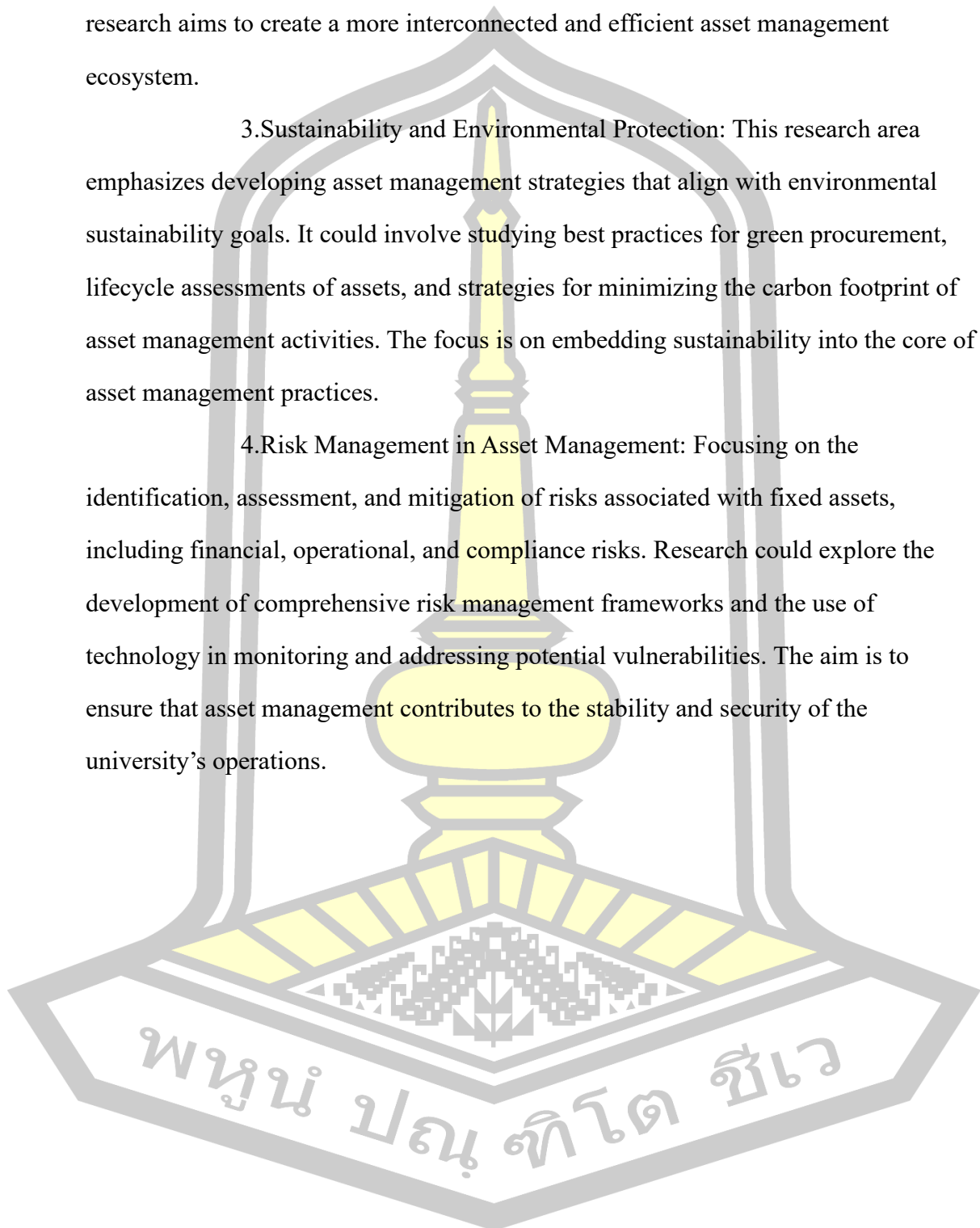
1. Digital Technologies in Asset Management: This area focuses on leveraging cutting-edge technologies to automate and optimize fixed assets management processes. Research could explore the specific applications of AI for predictive maintenance, IoT devices for real-time tracking, and big data analytics for strategic decision-making. The goal is to enhance asset utilization, extend asset lifecycles, and improve decision accuracy.

2. Blockchain and Supply Chain Optimization: Investigating how blockchain technology can enhance transparency, security, and trust in asset transactions, including procurement and disposal. Additionally, exploring supply chain collaborative optimization could lead to more streamlined procurement

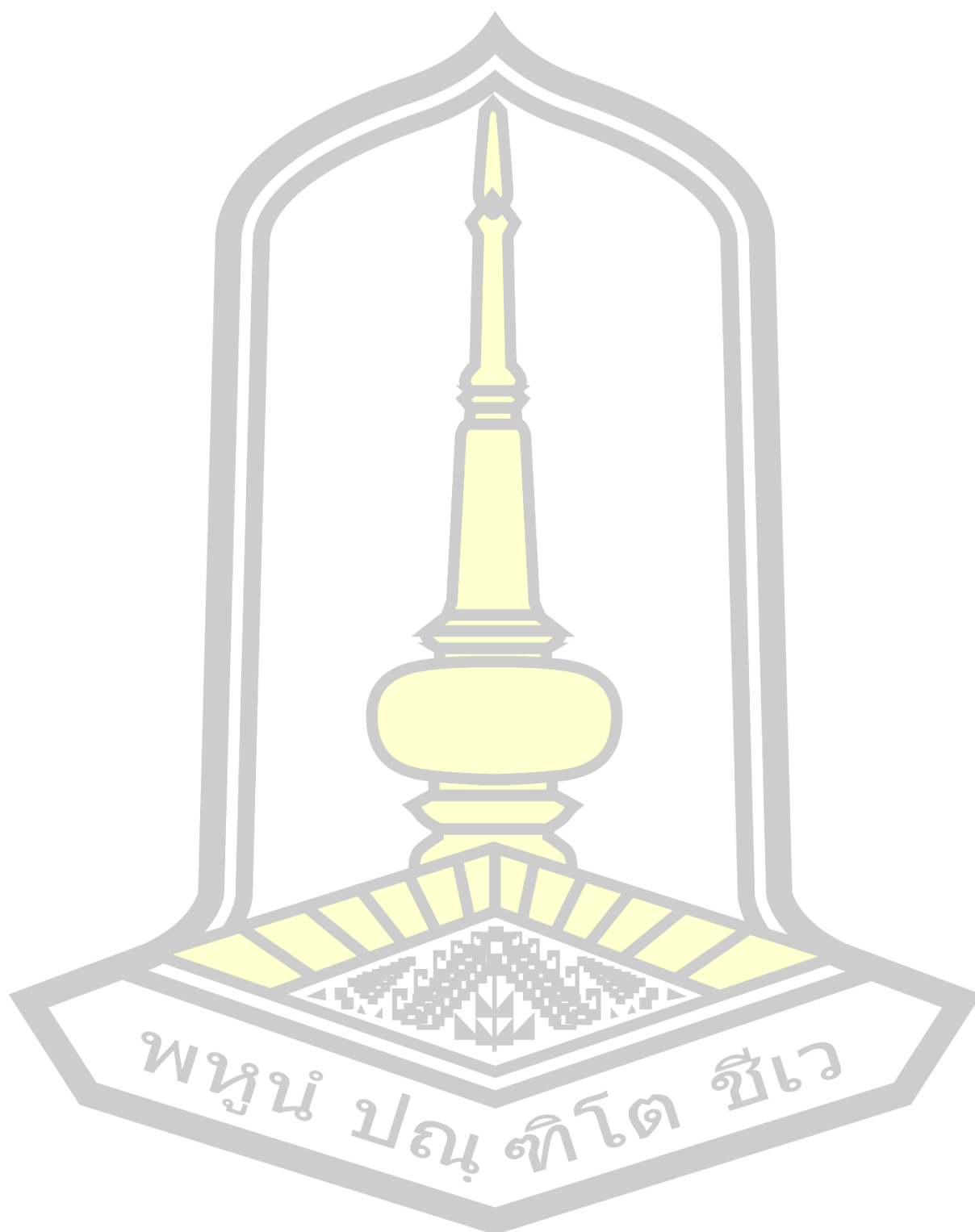
processes, better inventory management, and improved supplier relationships. This research aims to create a more interconnected and efficient asset management ecosystem.

3.Sustainability and Environmental Protection: This research area emphasizes developing asset management strategies that align with environmental sustainability goals. It could involve studying best practices for green procurement, lifecycle assessments of assets, and strategies for minimizing the carbon footprint of asset management activities. The focus is on embedding sustainability into the core of asset management practices.

4.Risk Management in Asset Management: Focusing on the identification, assessment, and mitigation of risks associated with fixed assets, including financial, operational, and compliance risks. Research could explore the development of comprehensive risk management frameworks and the use of technology in monitoring and addressing potential vulnerabilities. The aim is to ensure that asset management contributes to the stability and security of the university's operations.



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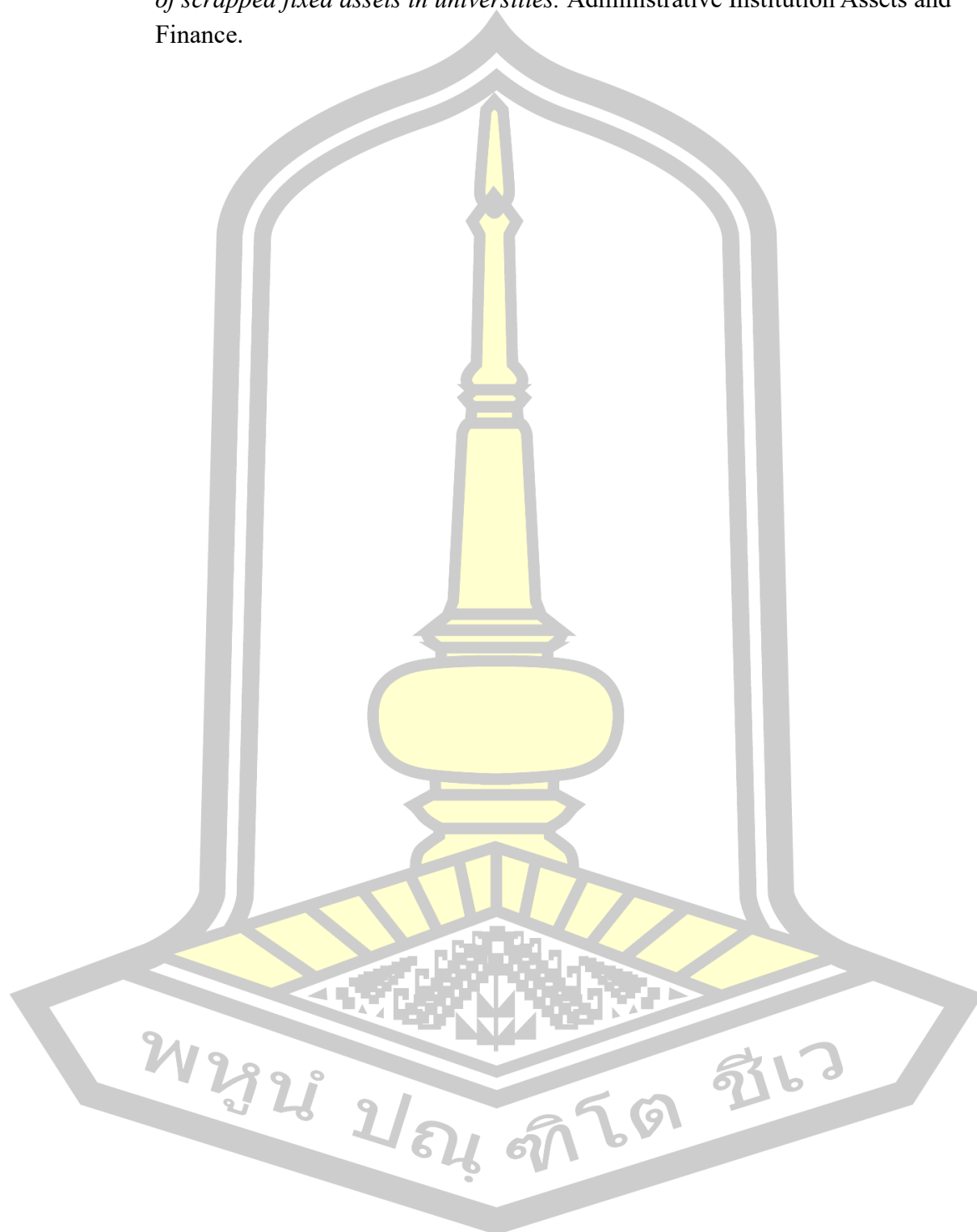
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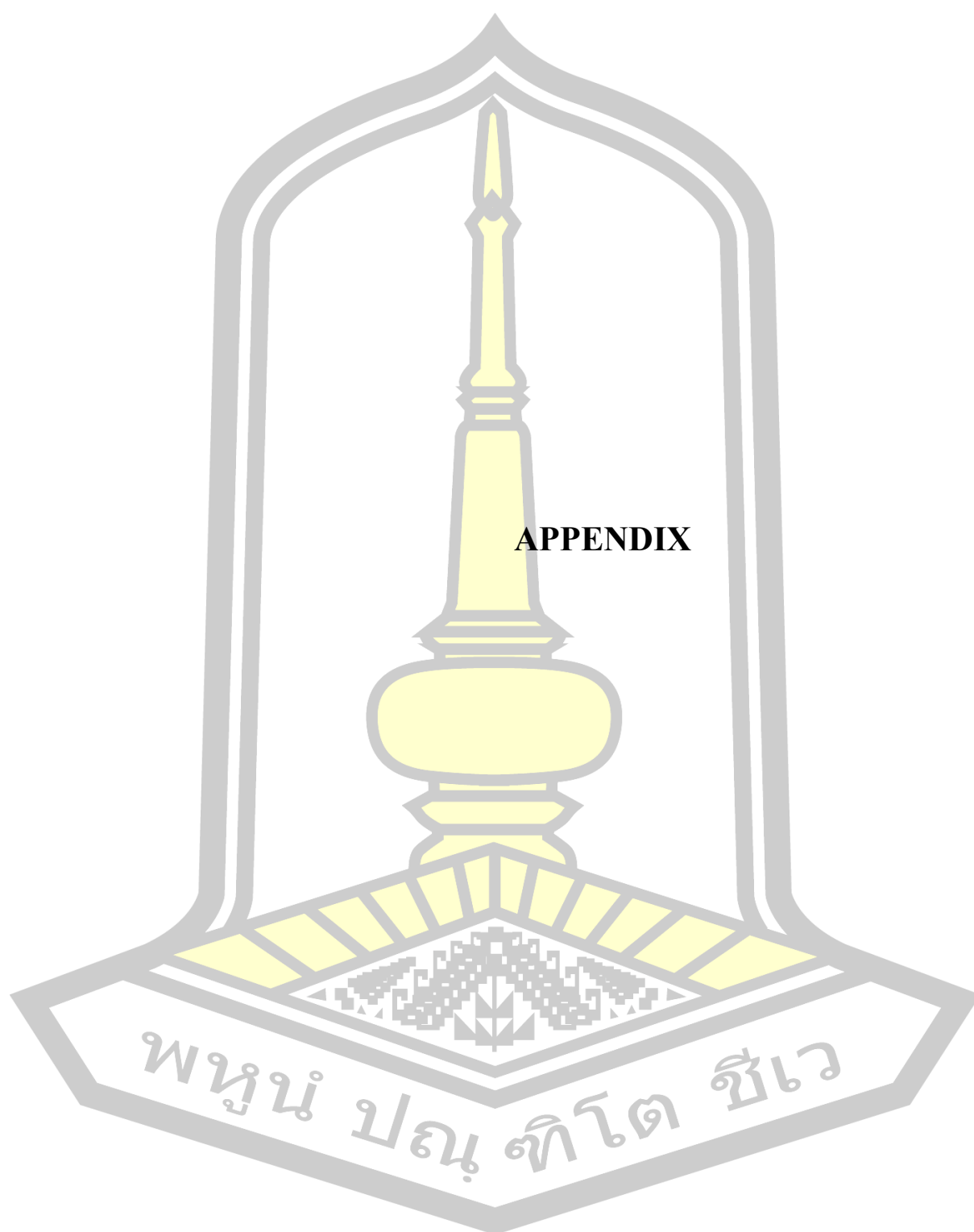
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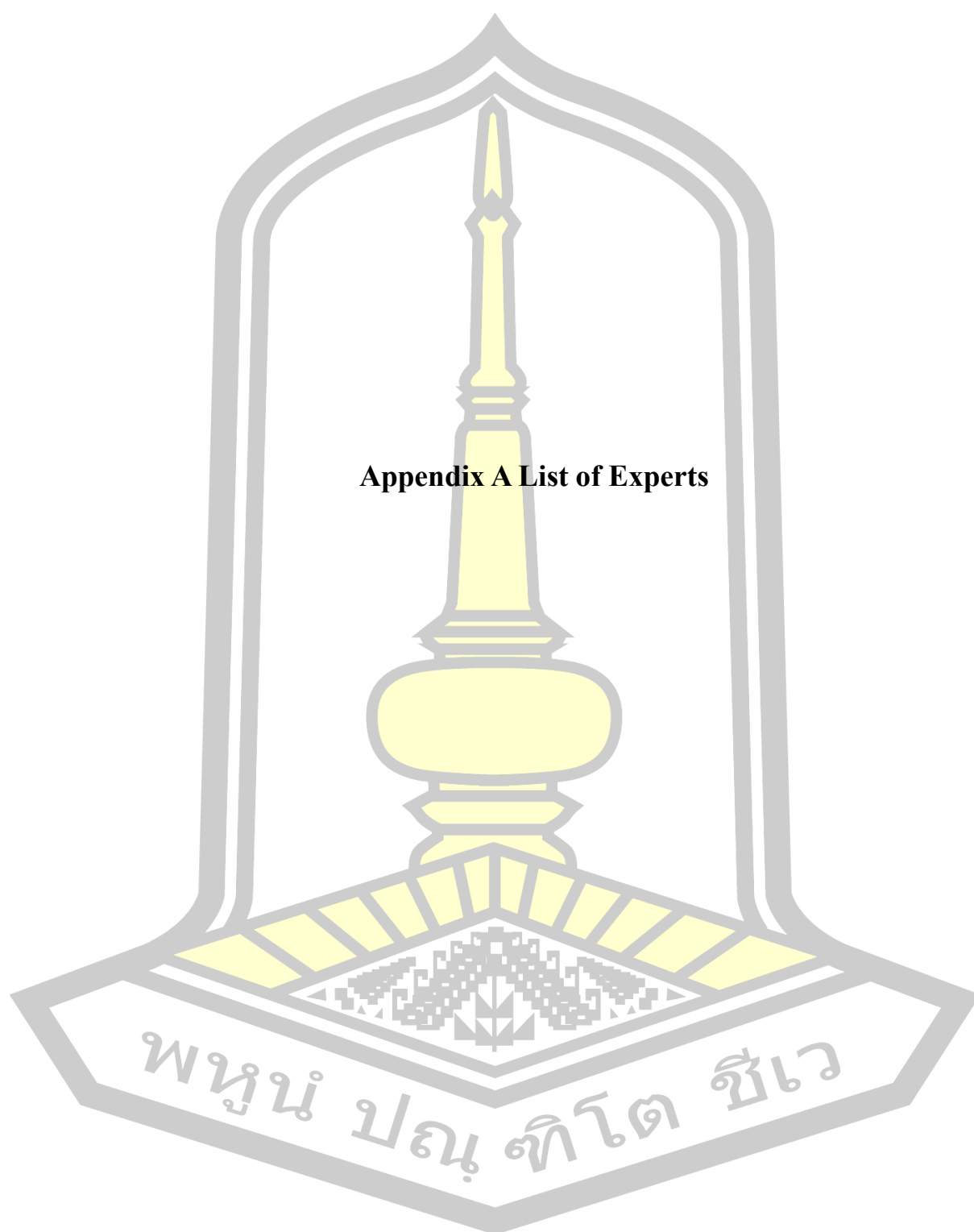
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Appendix A List of Experts

List of Experts to Check the Components

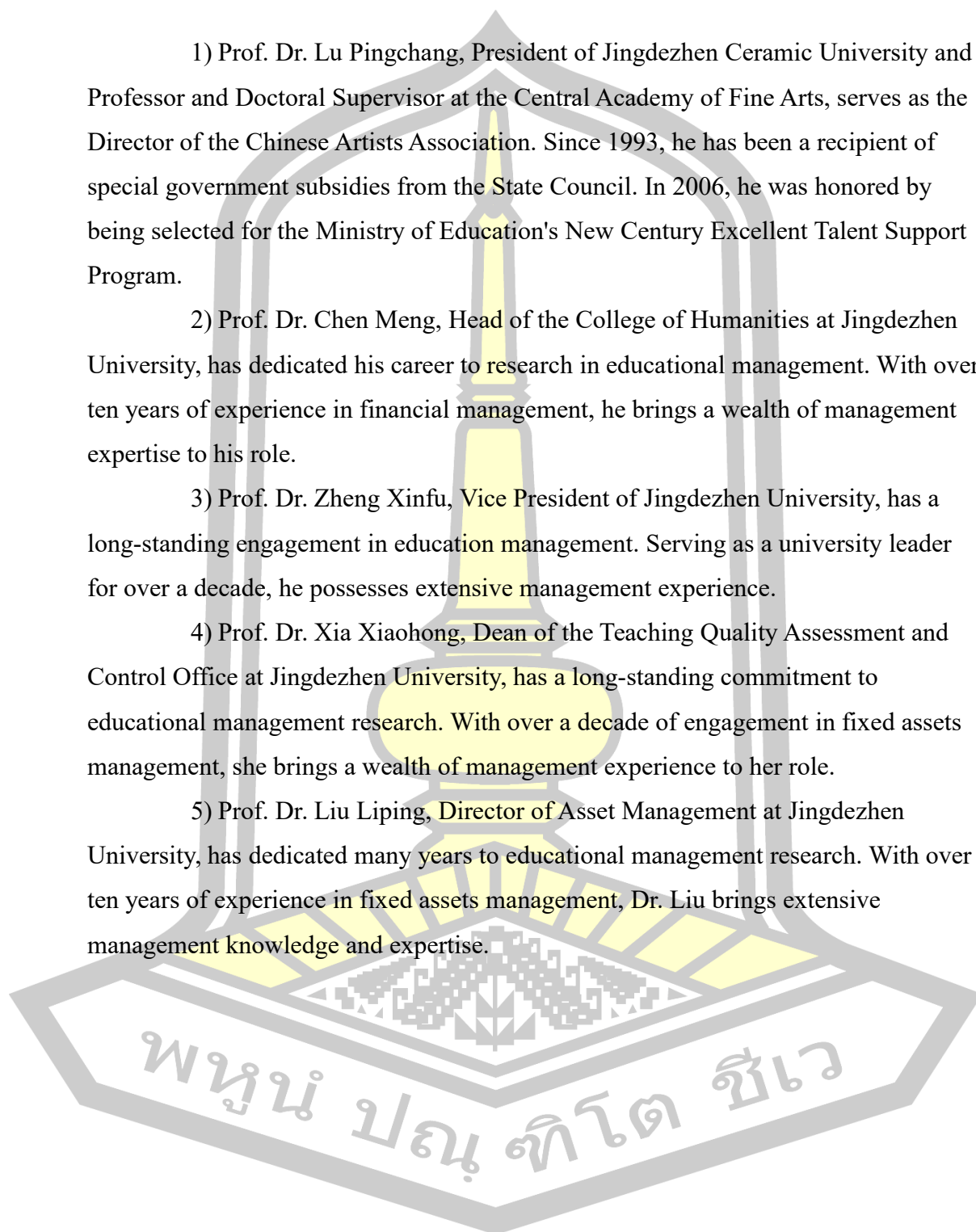
1) Prof. Dr. Lu Pingchang, President of Jingdezhen Ceramic University and Professor and Doctoral Supervisor at the Central Academy of Fine Arts, serves as the Director of the Chinese Artists Association. Since 1993, he has been a recipient of special government subsidies from the State Council. In 2006, he was honored by being selected for the Ministry of Education's New Century Excellent Talent Support Program.

2) Prof. Dr. Chen Meng, Head of the College of Humanities at Jingdezhen University, has dedicated his career to research in educational management. With over ten years of experience in financial management, he brings a wealth of management expertise to his role.

3) Prof. Dr. Zheng Xinfu, Vice President of Jingdezhen University, has a long-standing engagement in education management. Serving as a university leader for over a decade, he possesses extensive management experience.

4) Prof. Dr. Xia Xiaohong, Dean of the Teaching Quality Assessment and Control Office at Jingdezhen University, has a long-standing commitment to educational management research. With over a decade of engagement in fixed assets management, she brings a wealth of management experience to her role.

5) Prof. Dr. Liu Liping, Director of Asset Management at Jingdezhen University, has dedicated many years to educational management research. With over ten years of experience in fixed assets management, Dr. Liu brings extensive management knowledge and expertise.



List of Experts to Evaluate the Research Instruments

1) Prof. Dr. Chen Yunping, President of Jingdezhen University, has successfully led the completion of three projects funded by the National Natural Science Foundation and the National Social Science Foundation. In addition, Dr. Chen has overseen more than 30 provincial social planning, education planning, humanities and social science research in universities, science and technology projects, and soft science and commissioned horizontal projects.

2) Prof. Dr. Fang Man, Vice President of Jingdezhen University, has been engaged in education management for an extended period and has served as a university leader for more than a decade. With extensive management experience, Dr. Fang has contributed significantly to the development and administration of the university.

3) Prof. Dr. Huang Zhijian, Vice President of Jingdezhen University, has been deeply involved in education management for many years and has served as a university leader for over a decade. With substantial management experience, Dr. Huang has played a pivotal role in the administration and strategic development of the university.

4) Prof. Dr. Xiao Xu, President of Jiangxi Arts & Ceramics Technology Institute, has dedicated a significant portion of his career to education management. Serving as a university leader for over a decade, Dr. Xiao possesses extensive management experience, contributing significantly to the growth and development of the institute.

5) Prof. Dr. Lu Jinquan, Vice President of Jingdezhen Ceramic University, has a long-standing commitment to education management. With over a decade of service as a university leader, Dr. Lu brings a wealth of management experience to his role, contributing to the university's continued success and development.

List of Interviewed Informants

1) Prof. Dr. Wu Bing, Director of Tendering and Procurement at Jingdezhen Ceramic University, has dedicated many years to research in educational management. With over a decade of experience in managing fixed assets, Dr. Wu possesses extensive expertise and knowledge, making significant contributions to the field and the university's asset management practices.

2) Prof. Dr. Liu Jiancheng, Director of Asset Management at Jingdezhen Ceramic University, has devoted himself to research in educational management. With a tenure of over ten years in fixed assets management, Dr. Liu has accumulated extensive expertise and management experience, greatly benefiting the university's asset management efforts.

3) Prof. Dr. Cao Wubin, Director of Asset Management at Jingdezhen University, has dedicated himself to research in educational management. Engaged in auditing work for over a decade, Dr. Cao brings a wealth of management expertise and experience to his role.

4) Prof. Dr. Li Yingxi, Director of Asset Management at Jiangxi Arts & Ceramics Technology Institute, has a long-standing commitment to educational management research. With over a decade of experience in fixed assets management, Dr. Li brings valuable expertise and a wealth of management experience to the institution.

5) Prof. Dr. Liang Bangfu, Dean of the Asset Management Office at Jiangxi Arts & Ceramics Technology Institute, has dedicated many years to educational management research. Dr. Liang's engagement in fixed assets management for over a decade has endowed him with substantial management experience, making him a pivotal figure in the strategic planning and effective handling of the institute's assets.

List of Experts to Evaluate the Approaches s

1) Prof. Dr. Liu Junzhuo, Director of the Information Center at Jingdezhen University, has devoted a significant portion of his career to educational management research. With over a decade of experience in information management, Dr. Liu has accumulated extensive expertise, demonstrating his capability in overseeing and advancing the university's information systems and technology infrastructure.

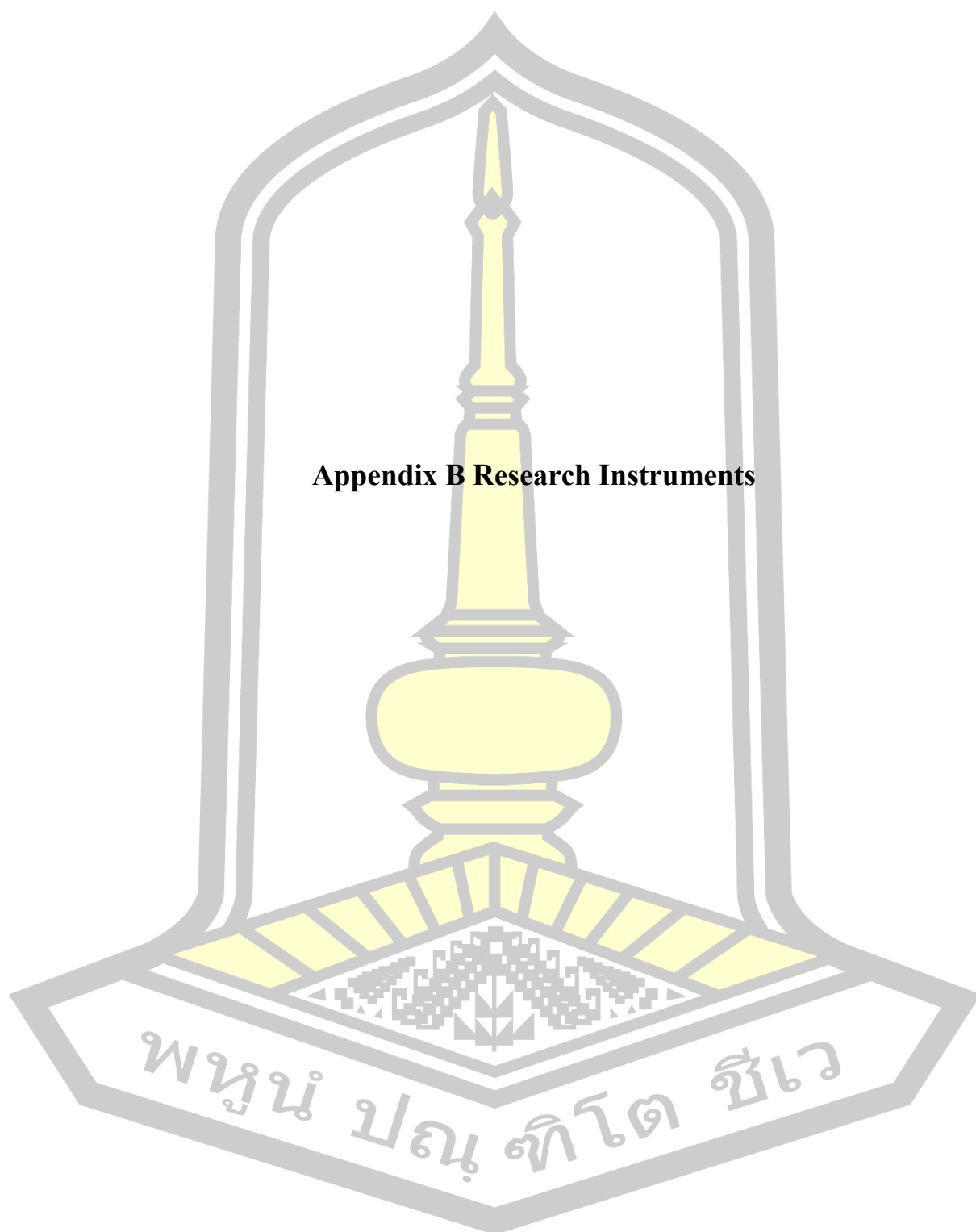
2) Prof. Dr. Xiang Zhongmin, Director of Equipment Management at Jiangxi Arts & Ceramics Technology Institute, has dedicated a significant part of his career to the field of educational management research. With more than a decade of experience specifically in fixed assets management, Dr. Xiang has developed a wealth of knowledge and expertise.

3) Prof. Dr. Hu Yongjun, Director of the Finance Department at Jingdezhen University, has dedicated a significant part of his career to educational management research. With over a decade of experience in financial management, Dr. Hu brings a wealth of expertise and a deep understanding of financial strategies and practices to the institution.

4) Prof. Dr. Li Yingxi, Director of Asset Management at Jiangxi Arts & Ceramics Technology Institute, has a long-standing commitment to educational management research. With over a decade of experience in fixed assets management, Dr. Li brings valuable expertise and a wealth of management experience to the institution.

5) Prof. Dr. Si Chuncan, Dean of the Academic Affairs Office at Jingdezhen University, has dedicated himself to educational management research for a long time. With over a decade of engagement in teaching equipment management, he brings a wealth of experience and deep insights into the effective management of educational resources and facilities.

Appendix B Research Instruments



Expert Questionnaire for Doctoral Degree Thesis

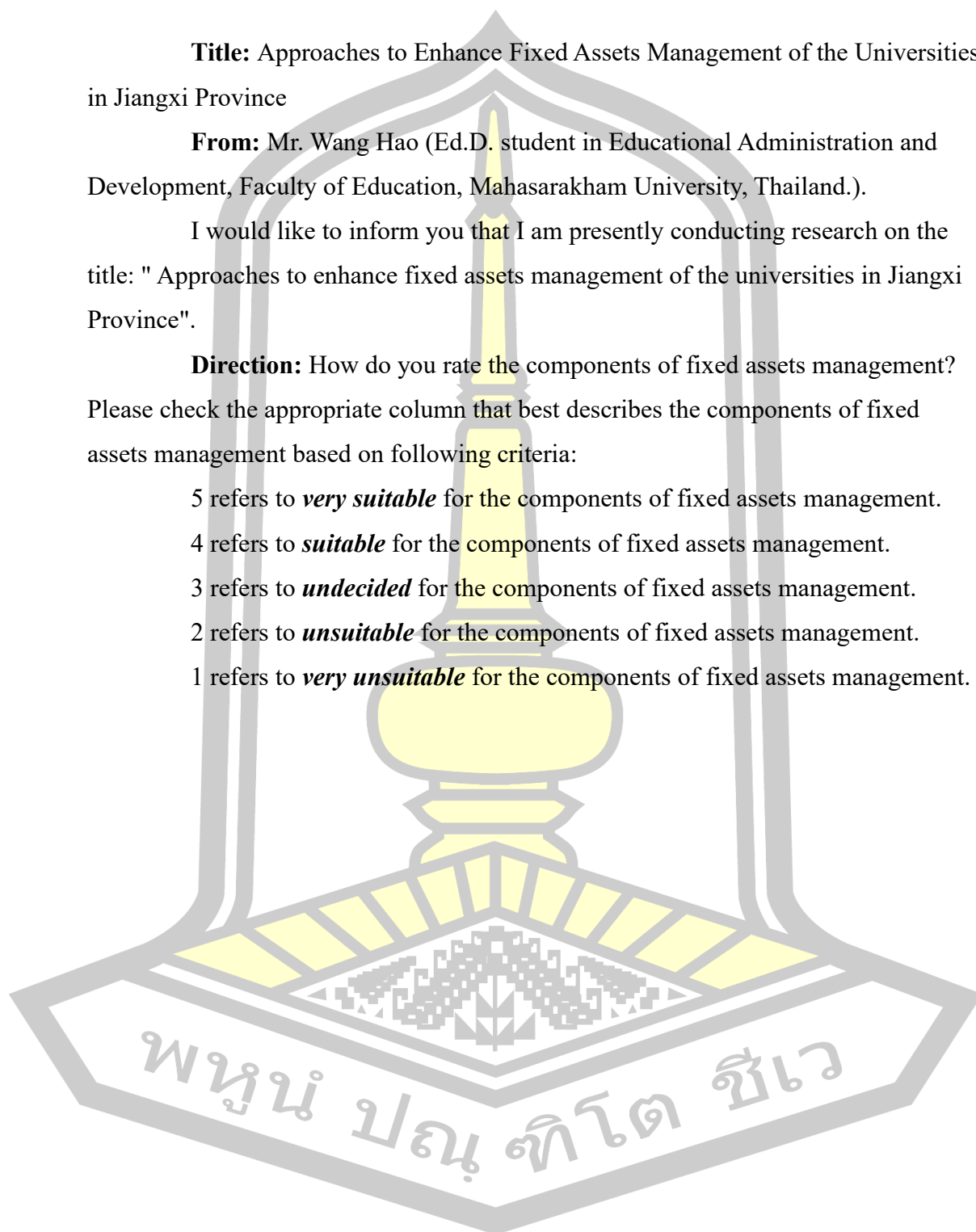
Title: Approaches to Enhance Fixed Assets Management of the Universities in Jiangxi Province

From: Mr. Wang Hao (Ed.D. student in Educational Administration and Development, Faculty of Education, Mahasarakham University, Thailand.).

I would like to inform you that I am presently conducting research on the title: " Approaches to enhance fixed assets management of the universities in Jiangxi Province".

Direction: How do you rate the components of fixed assets management? Please check the appropriate column that best describes the components of fixed assets management based on following criteria:

- 5 refers to ***very suitable*** for the components of fixed assets management.
- 4 refers to ***suitable*** for the components of fixed assets management.
- 3 refers to ***undecided*** for the components of fixed assets management.
- 2 refers to ***unsuitable*** for the components of fixed assets management.
- 1 refers to ***very unsuitable*** for the components of fixed assets management.



No	Components and Indicators of Fixed Assets Management	Suitability				
		5	4	3	2	1
1.Allocation of fixed assets						
1.1	Allocation standards					
1.2	Establishing system					
1.3	Approval process					
2.Purchase of fixed assets						
2.1	Agreement procurement					
2.2	Government procurement					
3.Registration of fixed assets						
3.1	Fixed assets acceptance					
3.2	Fixed assets inventory					
3.3	Establishment of ledger					
4.Use of fixed assets						
4.1	General fixed assets use					
4.2	Special fixed assets use					
4.3	Fixed assets transfer					
4.4	Fixed assets leasing					
5.Disposal of fixed assets						
5.1	Disposal scope					
5.2	Disposal methods and procedures					

More comments and suggestions:

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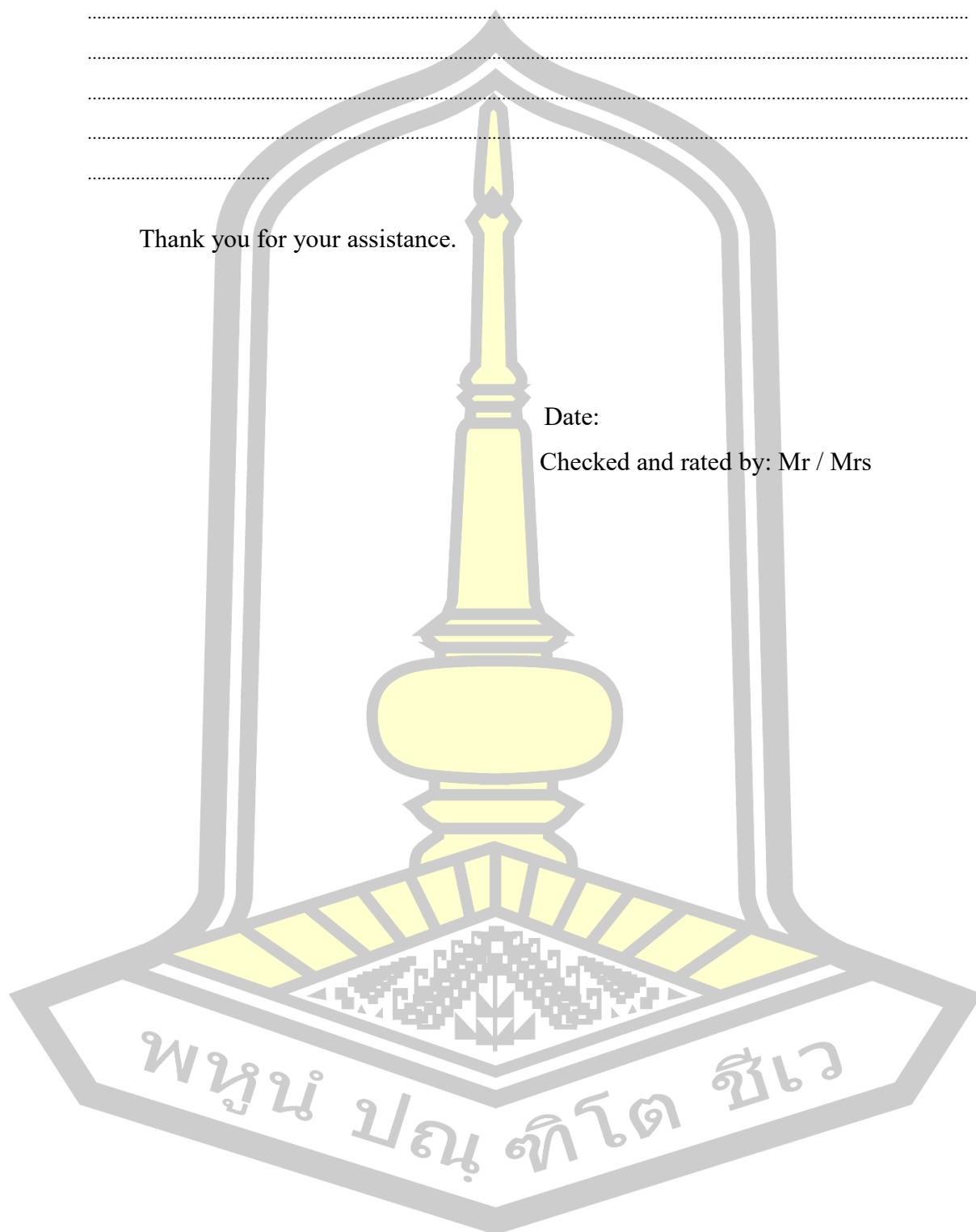
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.....

Thank you for your assistance.

Date:

Checked and rated by: Mr / Mrs



Survey Questionnaire for Doctoral Degree Thesis

Title: Approaches to Enhance Fixed Assets Management of the Universities in Jiangxi Province

Part I : Personal Profile

1.Name of University (Please specify):

2.Profession: ☐ Full-time staff ☐ Part-time staff

Part II : The level of fixed assets management

Direction: How do you rate the level of fixed assets management in your university? Please check the appropriate column that best describes your university level of fixed assets management based on following criteria:

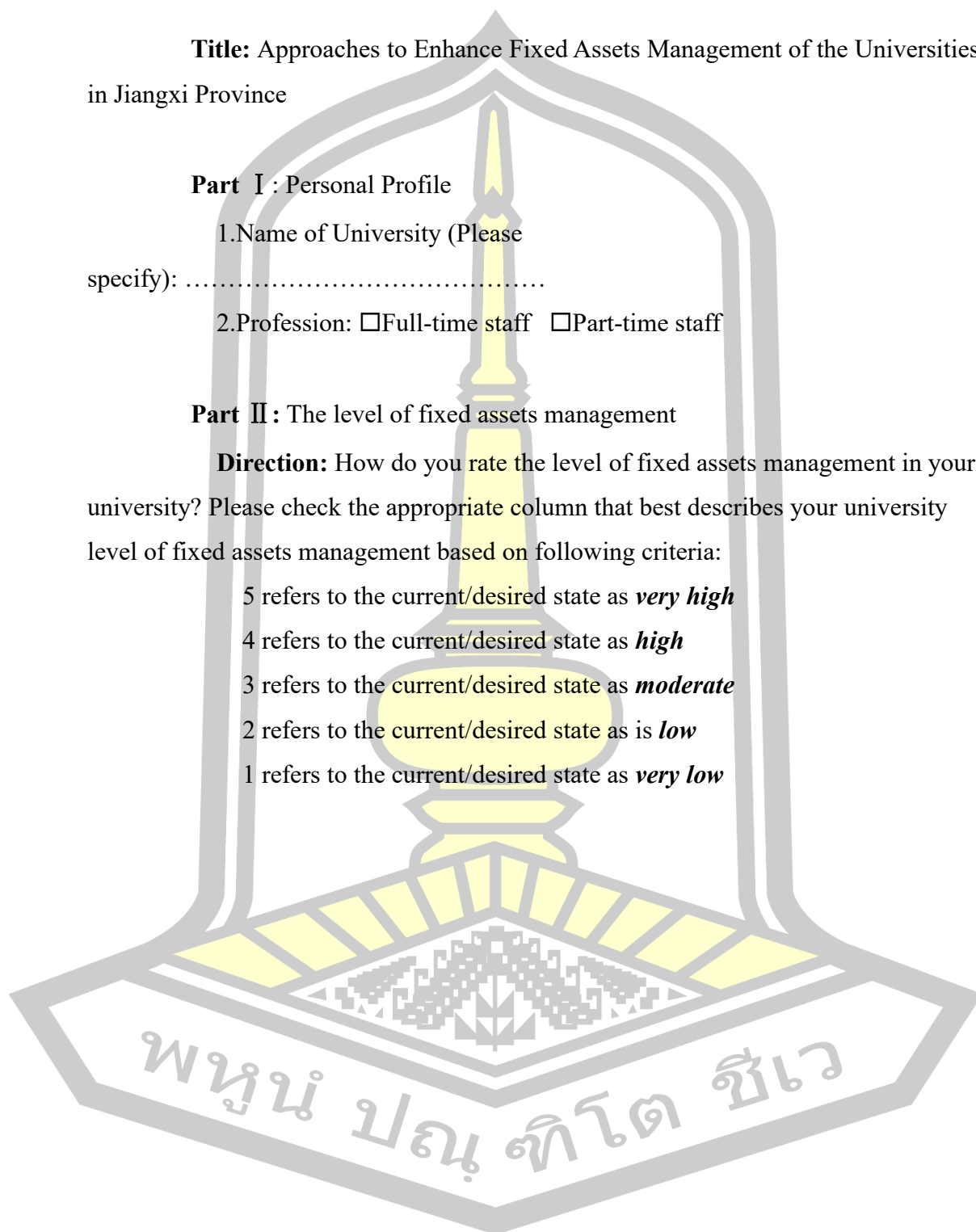
5 refers to the current/desired state as *very high*

4 refers to the current/desired state as *high*

3 refers to the current/desired state as *moderate*

2 refers to the current/desired state as is *low*

1 refers to the current/desired state as *very low*



[illegible]

No	Fixed Assets Management	Current State					Desired State					Suggestions
		5	4	3	2	1	5	4	3	2	1	
		Very high	High	Moderate	Low	Very low	Very high	High	Moderate	Low	Very low	
Registration of fixed assets												
1	By establishing a fixed asset acceptance system, the acceptance procedures, composition of the acceptance team, and acceptance responsibilities have been clarified.											
2	Conduct physical inventory, verification, and final settlement of fixed assets.											
3	Establish a fixed asset ledger.											



No	Fixed Assets Management	Current State					Desired State					Suggestions
		5	4	3	2	1	5	4	3	2	1	
		Very high	High	Moderate	Low	Very low	Very high	High	Moderate	Low	Very low	
Use of fixed assets												
1	The asset management department has a comprehensive and accurate grasp of the use of assets to enhance the feasibility of the use of assets.											
2	Ensuring the efficient use of fixed assets and the strict implementation of norms governing their use.											
3	Establish a performance evaluation mechanism and incorporate it into the assessment of functional objectives, project management, assets and laboratory management of relevant departments.											

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No	Fixed Assets Management	Current State					Desired State					Suggestions
		5	4	3	2	1	5	4	3	2	1	
		Very high	High	Moderate	Low	Very low	Very high	High	Moderate	Low	Very low	
Disposal of fixed assets												
1	Determine the scope for disposal of fixed assets.											
2	Determine the method for disposal of fixed assets.											
3	Determine the procedure for disposal of fixed assets.											

Comments:

What would you like to improve or put in the agenda in your university in order to promote the quality of fixed assets management? Please leave your comments below:

.....

.....

.....

.....

Thank you for your assistance.

Interview Outline for Doctoral Degree Thesis

Title: Approaches to Enhance Fixed Assets Management of the Universities
in Jiangxi Province

Part 1: General Information

Interviewer:

Interview time:

Interview place:

Interviewee name:

Interviewee's workplace:

Interviewee's title:

Interviewee's working experiences:

☐ 1-10 years ☐ 11-20 years ☐ 21 years up

Part II: Interview Content

1. How to optimize allocation of fixed assets through data analysis and intelligent decision support systems?

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2. How does digital technology play a role in the allocation of fixed assets?

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3.How do you think universities should adjust their allocation of fixed assets strategies in the context of promoting sustainable development?

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4.How to ensure value for money and optimize cost-effectiveness when purchasing fixed assets?

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5.How do you balance the needs and opinions of various stakeholders in the procurement process?

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6.How would you evaluate the current procurement process? What areas do you see for improvement?

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7.What do you think is the most important aspect to improve in the registration of fixed assets in universities?

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8.Is there any latest progress or innovation in the registration of fixed assets?

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.....

9.How to strengthen the supervision and review of fixed assets registration in universities to ensure the accuracy and completeness of data?

.....

.....

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.....

10.How do you view the significance of fixed assets utilization management in universities?

.....

.....

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.....

.....

11. What measures are most effective in improving the efficiency of fixed assets utilization?

.....

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12. How to balance the long-term interests and short-term needs of the universities in the management of fixed asset utilization?

.....

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13. How is the management system for the disposal of fixed assets constructed? What are the key success factors in this process?

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14. In the digital age, how to use advanced technologies such as artificial intelligence, big data, etc. to optimize the fixed assets disposal process?

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15. What green measures have been taken in the disposal of fixed assets in the face of environmental protection challenges? How do these measures balance economic benefits and environmental responsibility?

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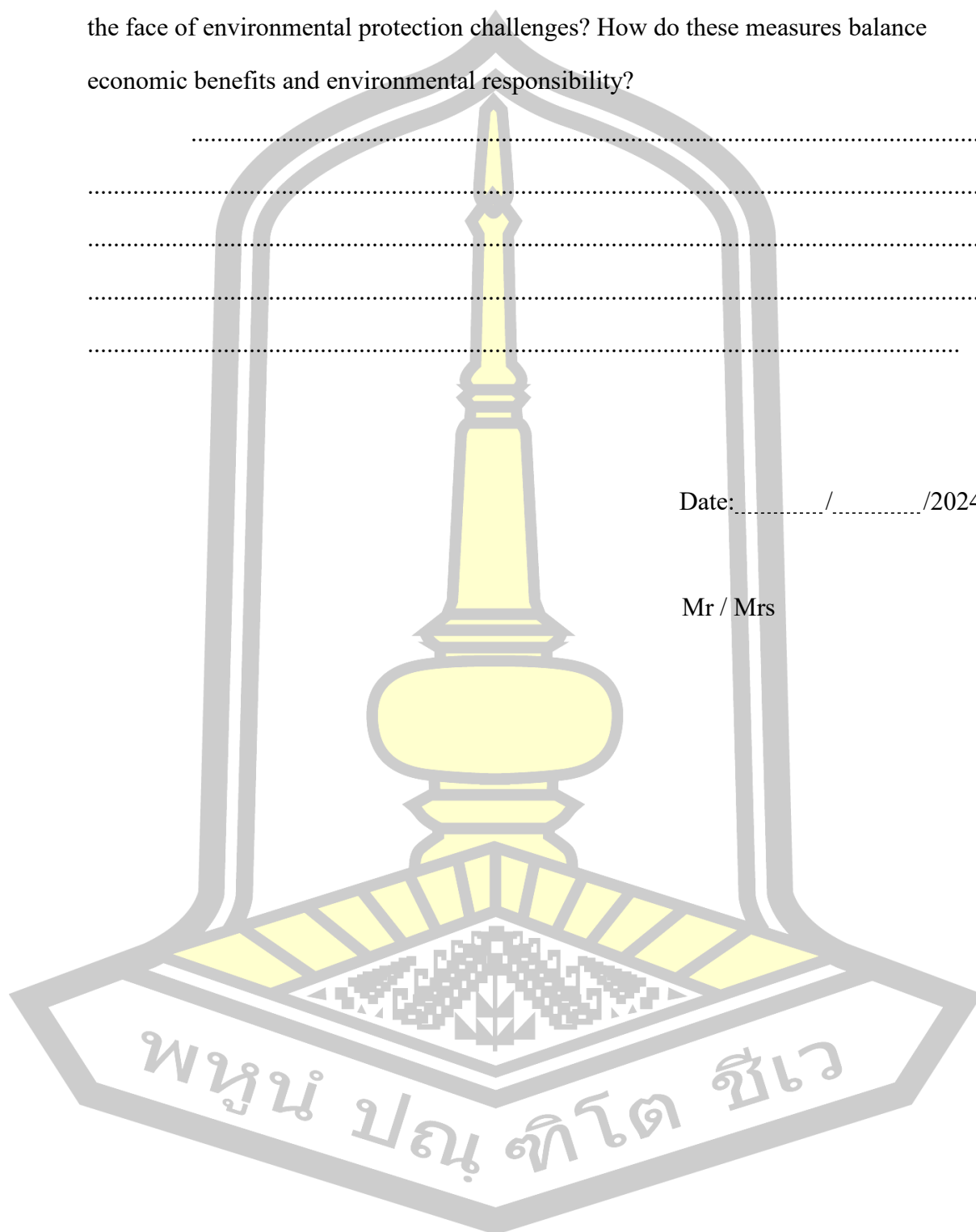
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Date: / / 2024

Mr / Mrs

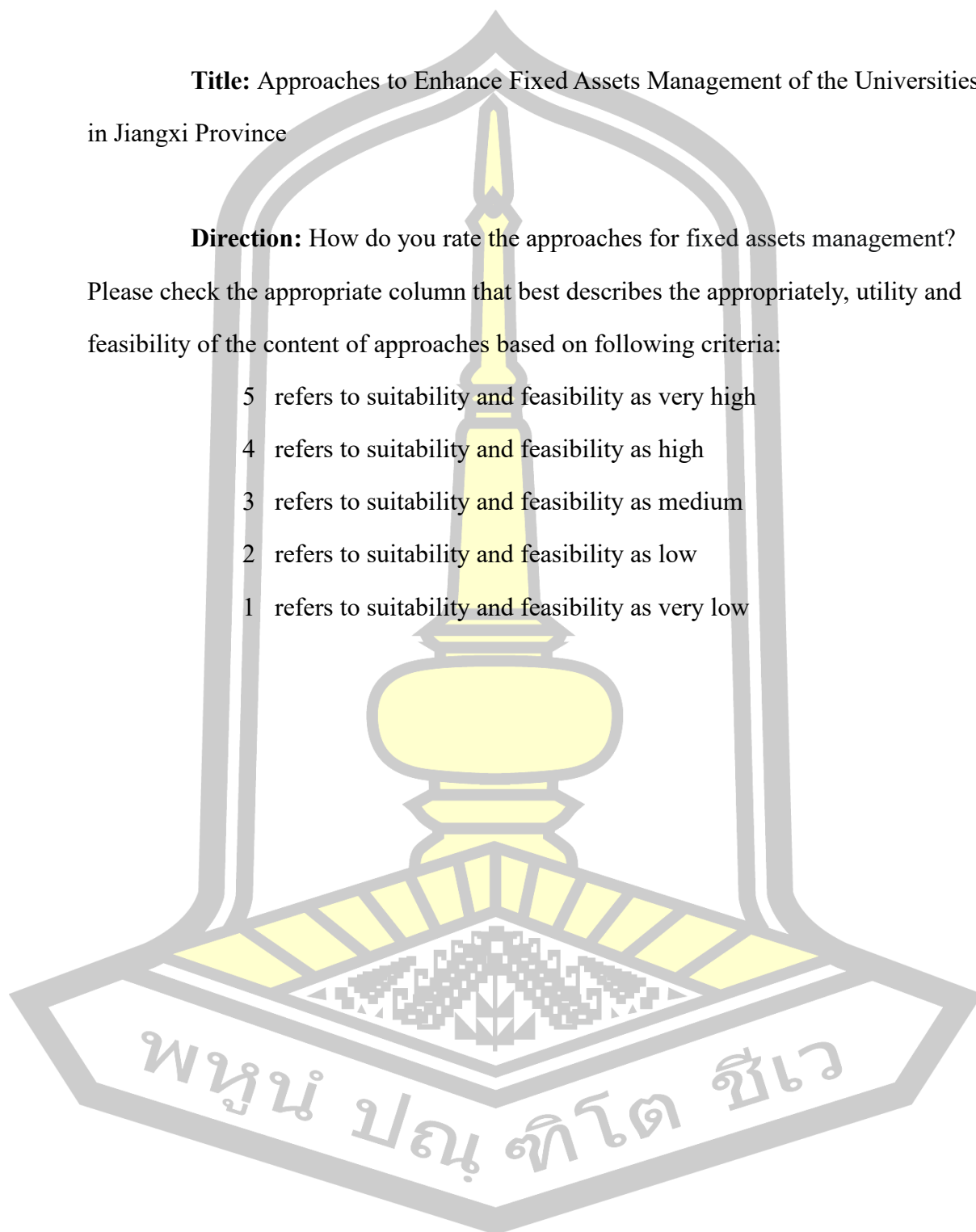


Expert Evaluation Table for Approaches for Doctoral Degree Thesis

Title: Approaches to Enhance Fixed Assets Management of the Universities in Jiangxi Province

Direction: How do you rate the approaches for fixed assets management? Please check the appropriate column that best describes the appropriateness, utility and feasibility of the content of approaches based on following criteria:

- 5 refers to suitability and feasibility as very high
- 4 refers to suitability and feasibility as high
- 3 refers to suitability and feasibility as medium
- 2 refers to suitability and feasibility as low
- 1 refers to suitability and feasibility as very low

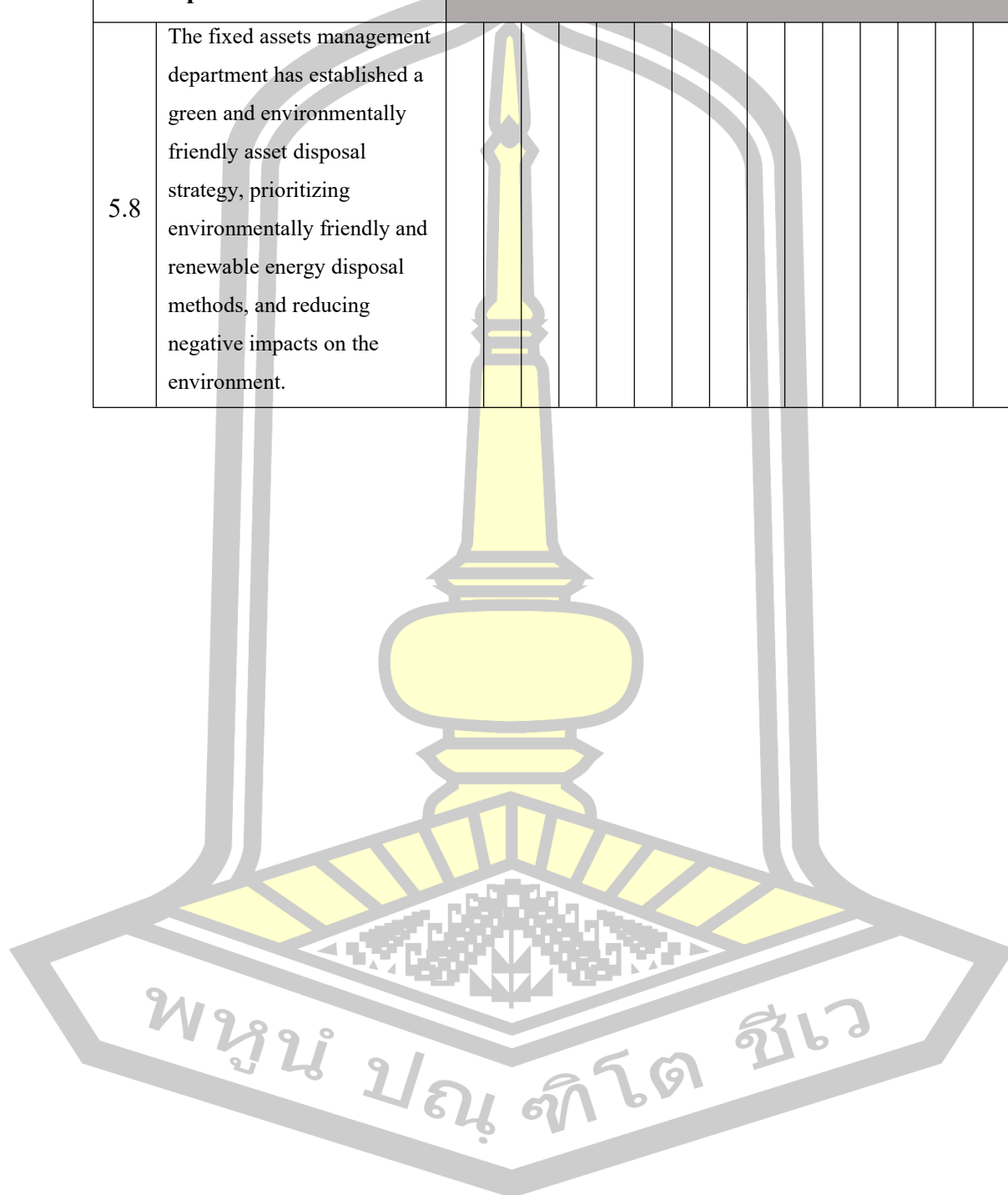


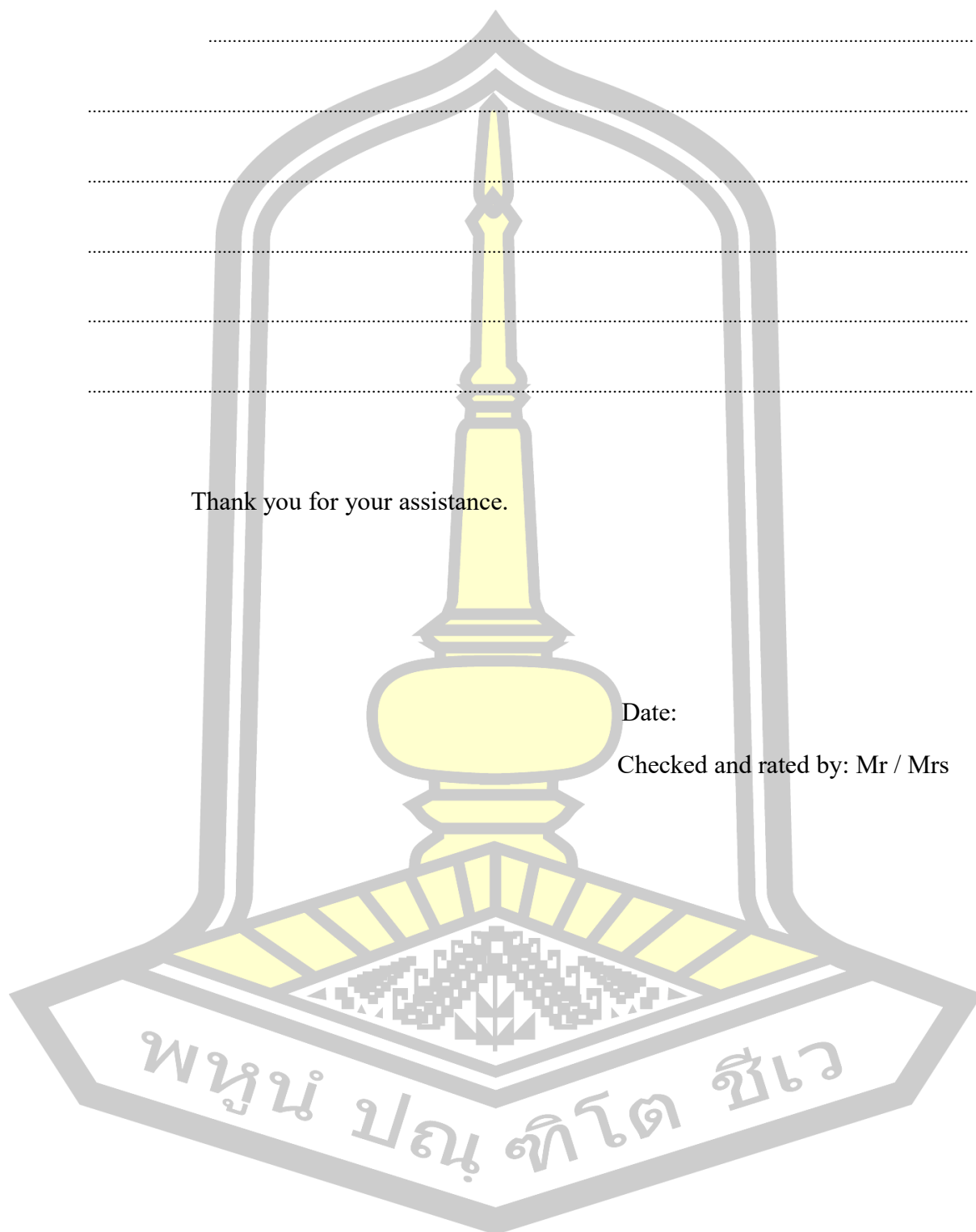
[illegible]

[illegible]

[illegible]

No	Fixed Assets Management	Appropriately					Utility					Feasibility				
		5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
5.Disposal of fixed assets																
5.8	The fixed assets management department has established a green and environmentally friendly asset disposal strategy, prioritizing environmentally friendly and renewable energy disposal methods, and reducing negative impacts on the environment.															



More comments and suggestions:

Appendix C Determination of the Quality of Research Instruments



Item-Objective Congruence Index (IOC)

Table 31 Item-Objective Congruence Index (IOC) Survey Results

No	Expert					Total	IOC	Evaluation Result
	1	2	3	4	5			
1	+1	+1	+1	+1	+1	5	1.00	Consistent
2	+1	+1	+1	+1	+1	5	1.00	Consistent
3	+1	+1	+1	+1	+1	5	1.00	Consistent
4	+1	+1	+1	+1	+1	5	1.00	Consistent
5	+1	+1	+1	+1	+1	5	1.00	Consistent
6	+1	+1	+1	+1	+1	5	1.00	Consistent
7	+1	+1	+1	+1	+1	5	1.00	Consistent
8	+1	+1	+1	+1	+1	5	1.00	Consistent
9	+1	+1	+1	+1	+1	5	1.00	Consistent
10	+1	+1	+1	+1	+1	5	1.00	Consistent
11	+1	+1	+1	+1	+1	5	1.00	Consistent
12	+1	+1	+1	+1	+1	5	1.00	Consistent
13	+1	+1	+1	+1	+1	5	1.00	Consistent
14	+1	+1	+1	+1	+1	5	1.00	Consistent
15	+1	+1	+1	+1	+1	5	1.00	Consistent

พหุ ประถมศึกษา

Table 32 Pearson's Correlation Coefficient of the Questionnaire

N ₀	Pearson's Correlation Coefficient (r_{xy})	
	Current state	Desired state
1.1	.664	.699
1.2	.235	.435
1.3	.203	.397
2.1	.362	.546
2.2	.480	.464
2.3	.535	.333
3.1	.292	.679
3.2	.484	.479
3.3	.521	.480
4.1	.431	.480
4.2	.529	.660
4.3	.240	.480
5.1	.475	.535
5.2	.435	.721
5.3	.439	.578

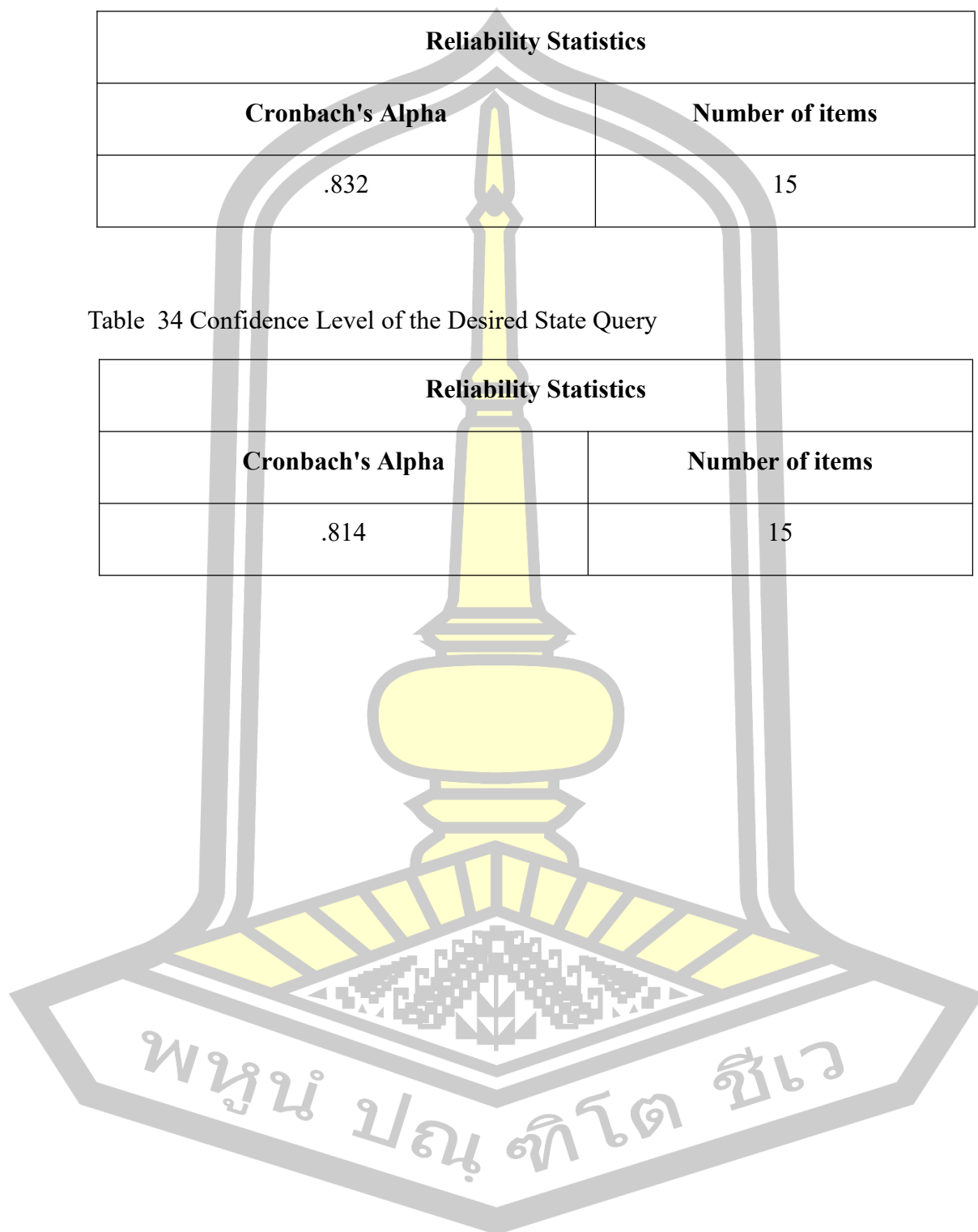


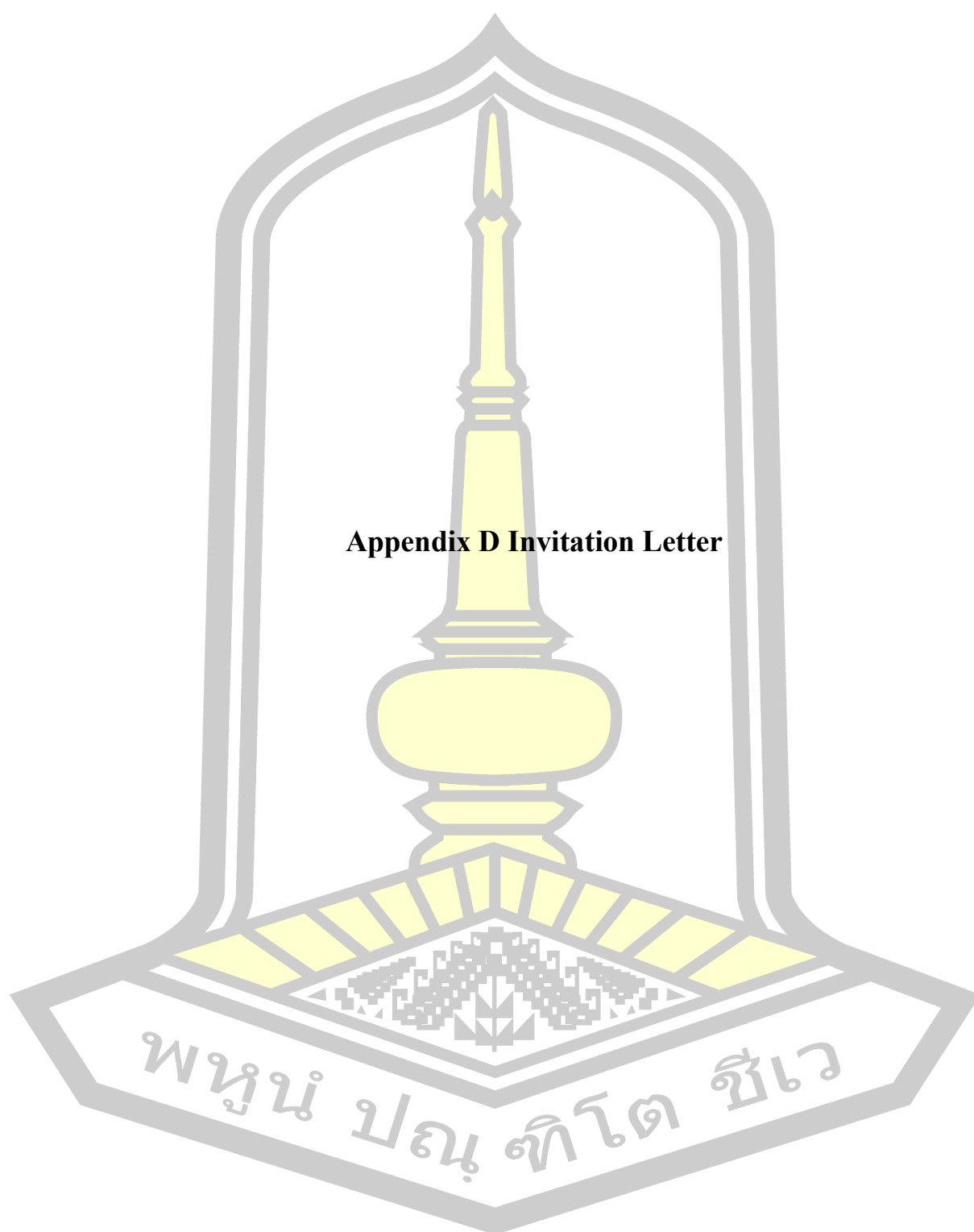
Table 33 Confidence Level of the Current Status Query

Reliability Statistics	
Cronbach's Alpha	Number of items
.832	15

Table 34 Confidence Level of the Desired State Query

Reliability Statistics	
Cronbach's Alpha	Number of items
.814	15





Appendix D Invitation Letter



FACULTY OF EDUCATION
MAHASARAKHAM UNIVERSITY

79/2 Muang, Maha Sarakham,
44000, THAILAND
Tel/fax +66 43 713 174
Email: cia.edu@msu.ac.th

Center for International Affairs

MHERSI No. 0605.5 (2)/CL5525

Date: December 14, 2023

To:

Prof. Liang Bangfu

Dean of Asset Management Office,

Jiangxi Arts & Ceramics Technology Institute

Subject:

Thesis Reviewer Invitation

Our student, **Mr. Wang Hao**, student ID **64010561019** majoring in the **Ed.D. Educational Administration and Development** program is currently undertaking a research project titled **"Developing a Guideline for Approach to Perform of Fixed Assets Management of the Universities in Jiangxi Province, China "** under the guidance of Assoc. Prof. Tharinthorn Namwan.

To ensure the successful execution and the highest quality of this research project, we are seeking your valuable expertise and experience. Therefore, I am delighted to formally invite you to serve as a reviewer for the research instrument designed for this thesis project.

Your participation in this academic endeavor is highly valued and appreciated. Should you require any further information or have questions regarding this invitation, please do not hesitate to email us.

Yours sincerely,

Assoc. Prof. Chowwalit Chookhampaeng

Dean, Faculty of Education,

Mahasarakham University



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MAHASARAKHAM UNIVERSITY

79/2 Muang, Maha Sarakham,
44000, THAILAND
Tel/fax +66 43 713 174
Email: cia.edu@msu.ac.th

Center for International Affairs

MHERSI No. 0605.5 (2)/CL42

Date: January 3, 2024

To:

Prof. Cao Wubin

Director of Asset Management of Jingdezhen University

Subject:

Thesis Reviewer Invitation

Our student, **Mr. Wang Hao**, student ID **64010561019** majoring in the **Ed.D. Educational Administration and Development** program is currently undertaking a research project titled "**Developing a Guideline for Approach to Perform of Fixed Assets Management of the Universities in Jiangxi Province, China**" under the guidance of Assoc. Prof. Tharinthorn Namwan.

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Dean, Faculty of Education,
Mahasarakham University



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44000, THAILAND
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Center for International Affairs

MHERSI No. 0605.5 (2)/CL42

Date: January 3, 2024

To:

Prof. Li Yingxi

Director of Asset Management of Jiangxi Arts & Ceramics Technology Institute

Subject:

Thesis Reviewer Invitation

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Center for International Affairs

MHERSI No. 0605.5 (2)/CL42

Date: January 3, 2024

To:

Prof. Liu Jiancheng

Director of Asset Management of Jingdezhen Ceramic University

Subject:

Thesis Reviewer Invitation

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Center for International Affairs

MHERSI No. 0605.5 (2)/CL5525

Date: December 14, 2023

To:

Prof. Si Chuncan

Dean of the Academic Affairs Office,
Jingdezhen University

Subject:

Thesis Reviewer Invitation

Our student, **Mr. Wang Hao**, student ID **64010561019** majoring in the **Ed.D. Educational Administration and Development** program is currently undertaking a research project titled **"Developing a Guideline for Approach to Perform of Fixed Assets Management of the Universities in Jiangxi Province, China "** under the guidance of Assoc. Prof. Tharinthorn Namwan.

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Center for International Affairs

MHERSI No. 0605.5 (2)/CL42

Date: January 3, 2024

To:

Prof. Wu Bing

Director of Tendering and Procurement of Jingdezhen Ceramic University

Subject:

Thesis Reviewer Invitation

Our student, **Mr. Wang Hao**, student ID **64010561019** majoring in the **Ed.D. Educational Administration and Development** program is currently undertaking a research project titled "**Developing a Guideline for Approach to Perform of Fixed Assets Management of the Universities in Jiangxi Province, China**" under the guidance of Assoc. Prof. Tharinthorn Namwan.

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Center for International Affairs

MHERSI No. 0605.5 (2)/CL42

Date: January 3, 2024

To:

Prof. Liu Junzhuo

Director of Information Center of Jingdezhen University

Subject:

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Email: cia.edu@msu.ac.th

Center for International Affairs

MHERSI No. 0605.5 (2)/CL42

Date: January 3, 2024

To:

Prof. Hu Yongjun

Director of Finance Department of Jingdezhen University

Subject:

Thesis Reviewer Invitation

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Center for International Affairs

MHERSI No. 0605.5 (2)/CL42

Date: January 3, 2024

To:

Prof. Xiang Zhongmin

Director of Equipment Management of Jiangxi Arts & Ceramics Technology Institute

Subject:

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Our student, **Mr. Wang Hao**, student ID **64010561019** majoring in the **Ed.D. Educational Administration and Development** program is currently undertaking a research project titled "**Developing a Guideline for Approach to Perform of Fixed Assets Management of the Universities in Jiangxi Province, China**" under the guidance of Assoc. Prof. Tharinthorn Namwan.

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44000, THAILAND
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Email: cia.edu@msu.ac.th

Center for International Affairs

MHERSI No. 0605.5 (2)/CL5499

Date: December 12, 2023

To: **Whom It May Concern**

Jiangxi Arts & Ceramics Technology Institute,
Nanchang City, Jiangxi Province, China

Subject: **Data Collection Permission Request**

Our student, **Mr. Wang Hao**, student number **64010561019**, majoring in the **Educational Administration and Development Program** is currently undertaking a research project titled **"Developing a Guideline for Approach to Perform of Fixed Assets Management of the Universities in Jiangxi Province"** under the guidance of Assoc. Prof. Tharinthorn Namwan.

To ensure this project's success and quality, we seek your permission to allow our students to process data collection within your institution.

The details of the data collection are as follows:

Thesis title: **Developing a Guideline for Approach to Perform of Fixed Assets Management of the Universities in Jiangxi Province**

The period of data collection: **December 2023 to January 2024**

We believe that your institution provides a valuable environment and resources that are essential for the successful execution of this research. The data collection process will be carried out diligently and with the utmost respect for your institution's policies and procedures. We acknowledge that the student has made the necessary preparations, including obtaining the Thesis title approval from our institution.

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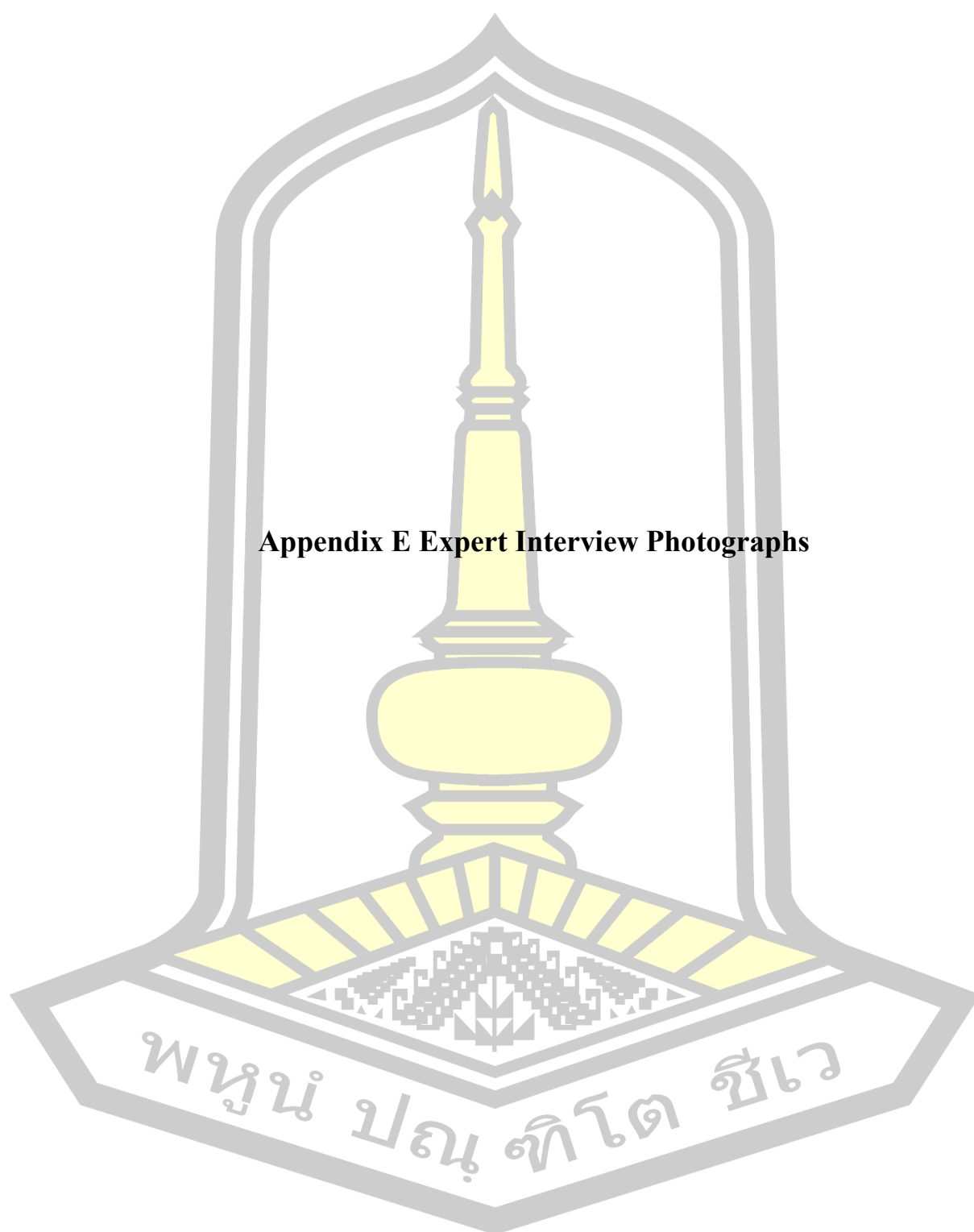
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Yours sincerely,

Assoc. Prof. Chowwalit Chookhampaeng

Dean, Faculty of Education,
Maharakham University

Appendix E Expert Interview Photographs





January 29, 2024: Face-to-Face Interview



January 30, 2024: Interview Meeting



January 31, 2024: Face-to-Face Interview



January 31, 2024: Face-to-Face Interview

BIOGRAPHY

NAME	Hao Wang
DATE OF BIRTH	6April1988
PLACE OF BIRTH	Jingdezhen City, Jiangxi Province, China
ADDRESS	406, Building 8, Guoxin Yucheng, Jingdezhen City, Jiangxi Province, China
PLACE OF WORK	Jingdezhen University,Jiangxi Province,China.
EDUCATION	2005 High School:Jingdezhen No.1 Middle School,Jiangxi Province,China. 2009 Bachelor Degree:Wuhan City College,Hubei Province,China. 2013 Master:Sichuan University,Sichuan Province,China. 2024 Doctor:Educational Administration and Development,Faculty of Education,Maharakham University,Thailand.

